

AMERICAN ARTISAN and Hardware Record

Vol. 88. No. 2.

620 SOUTH MICHIGAN AVENUE, CHICAGO, JULY 12, 1924.

\$2.00 Per Year

Success Heaters

EVERY detail of construction designed for unfailing and economical heating service.

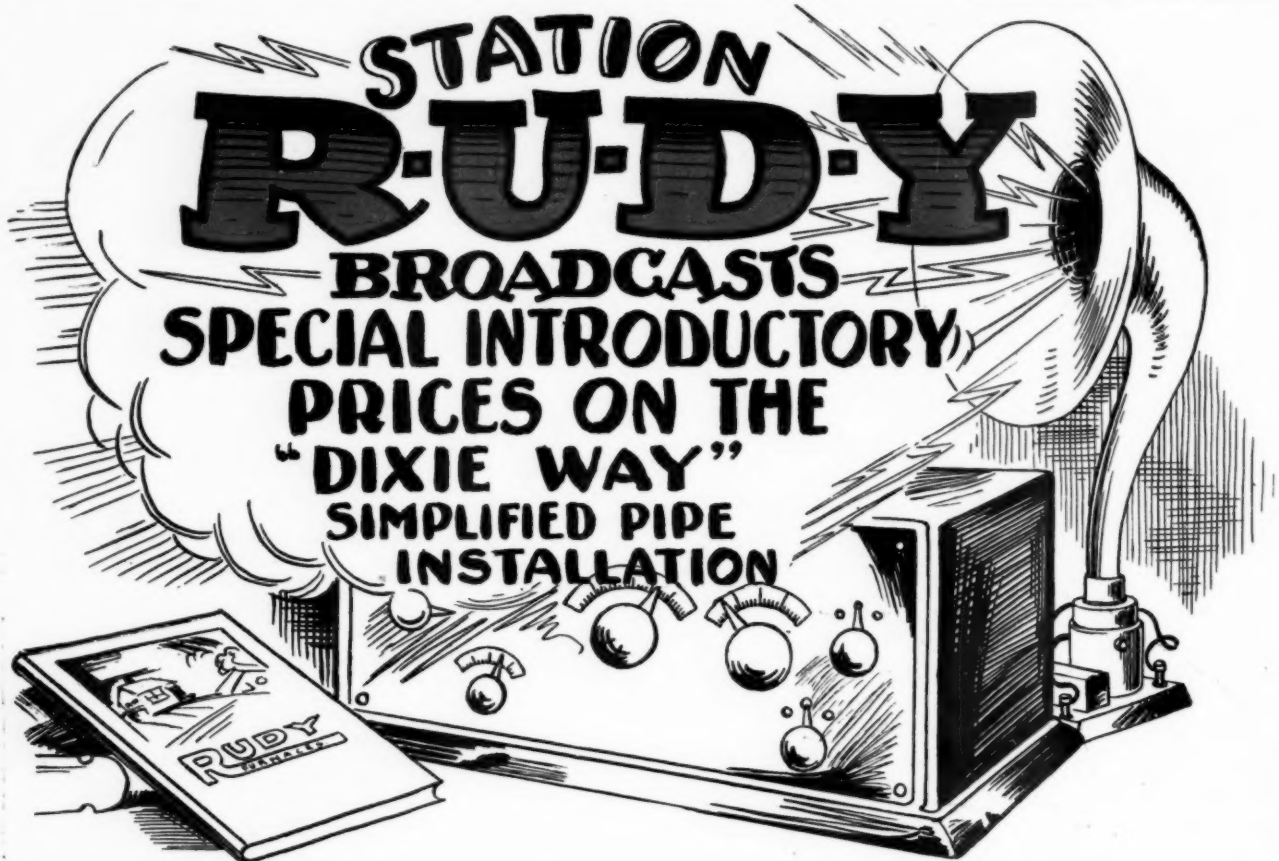
Strictly high quality material and workmanship.

The successful and practical Success Sales Plan insures dealers ever increasing business and dependable profits.

Write us today—we have an interesting story to tell you.



Success Heater Manufacturing Company
Des Moines, Iowa



Has Your Pipeless Business Slipped?

Is There a Demand for Simplified Pipe Installations?

Here Is the Answer:

With a maximum of efficiency and a minimum of cost you can offer

"THE DIXIE WAY"

at a remarkably reasonable price.

Our Introductory Offer

Having specialized on "The Dixie Way" we are able to price this heater on the basis of quantity production.

We Want to Convince Your Trade

That this simple, inexpensive plant, which can be installed at small cost, will solve many of their heating problems—

That's why we have prepared especially attractive literature that will drive the argument home.

The DIXIE Way



Don't Delay—Write Today

For our Introductory Prices and Literature on the "Dixie Way."

The response to our recent four page advertisement in AMERICAN ARTISAN was highly satisfactory.

If we have not heard from you before we want to quote you.

A Complete Line

for every type of heating, large or small. If your town is open, ask about the

Rudy Agency

A Quality Line Reasonably Priced



THE RUDY FURNACE COMPANY
DOWAGIAC, MICHIGAN

Founded 1880 by Daniel Stern

Published to Serve
the
Warm Air Furnace
Sheet Metal, Stove
and
Hardware Interests

AMERICAN ARTISAN and Hardware Record

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INVITING YOU!

The editorial columns of AMERICAN ARTISAN are devoted to the development and perpetuation of the Warm Air Heating, Stove and Range, Sheet Metal and Hardware industries. Its readers are cordially invited at all times to use this commonsense method of obtaining the advice they need for the successful conduct of their business.

If your problem is a knotty or technical one, submit it to the Service Department and secure the benefits of the opinions of other men. It is an exchange information department, and you are asked to relate your accomplishments and tell how you have surmounted difficulties. Wherever possible rough sketches or photographs should accompany the questions or suggestions, as they always make clear the points involved. Use this Service Department freely; it is yours.

Answers to all questions will be held strictly confidential if so desired by the sender. If no mention is made to the contrary, questions and answers will be published in the various departments of AMERICAN ARTISAN.

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 42-44-46.

35 Years
of
Unqualified Satisfaction



The Quality of an Article is Judged By the Service it Renders.

READ MR. RUSH'S LETTER

Omaha, May 21st, 1923.

To whom it may concern:

This is to certify that in November, 1888, Milton Rogers and Sons of Omaha installed an **International Carton** furnace in my home. This furnace has been in use from then until now and with a few minor repairs will last several years longer.

It has given unqualified satisfaction and has amply sustained the splendid reputation established by the late Milton Rogers more than sixty years ago. My purpose is not to make invidious distinctions, nor to minimize the merits of other mercantile firms, but simply to give "honor to whom honor is due."

John Rush
1323 Martha Street

This same Dependable Furnace — this same dependable service is today available to the discriminating Furnace Buyer.

If you contemplate building a new home, or replacing your old Furnace, you will do well to consult Omaha's Oldest and Largest Heating Establishment.

ESTABLISHED 1855

MILTON ROGERS
AND SONS COMPANY

Furnace Department—1405 Harney St.

(Reprinted from Omaha World Herald)

You, too, can build a "splendid reputation"

How **INTERNATIONAL Carton Furnaces**
helped **Milton Rogers & Sons**
Company of Omaha

IF competition is the life of trade, then *reputation* is its sustenance. For upon the kind of reputation you build will depend the success or stagnation of your business.

Milton Rogers & Sons Company have built the kind of reputation that brings success. From a small beginning, but a beginning built on the right policy, this company has grown into a prosperous, highly successful organization.

The Carton Furnace has been a big factor in their success. For, as Mr. Rush puts it, "*this furnace has sustained the splendid reputation established by the late Milton Rogers more than sixty years ago.*"

There is very little satisfaction or profit in price competition, but Carton Furnaces and first class installations will bring you the more desirable class of customers, with whom price is only a secondary consideration.

By putting your efforts back of the **INTERNATIONAL Carton Furnace**, a furnace that sells on merit, that gives *unqualified satisfaction*, you too can build a *splendid reputation* that will result in a permanent, dividend paying business.

INTERNATIONAL HEATER COMPANY
UTICA, N. Y.

NEW YORK CHICAGO CLEVELAND NASHUA, N. H.

More Pep and Less Pessimism Will Produce More Profit Now and During Fall.



THIS is presidential year, and some of our readers have once more conceived the old, shop-worn notion that 1924 will not be a good year for business for that reason.

Business is usually as good as we make it.

If we really want to have good business we do not simply wish for it—we go out and make it.

Even in 1920 and 1921 they were more than a few who managed to show a fair net profit and increased sales.

But they did not belong to the cult of long-faced, do-nothing, calamity-howling pessimists.

And we have the pessimists with us today—who can see nothing but stagnation and dull days all the rest of 1924.

They would rather be right in their preconceived notion that business is going to be poor, than trying to prove that maybe that notion was wrong, after all.

This is not a mere "editorial" statement.

We have the head of one of the most successful mercantile institutions in the United States as authority.

Here is what he says in an advertisement published Monday, July 7th:

"PRESIDENTIAL YEAR

And Its Business Possibilities—

"The political pot is boiling. The standard bearers are being selected and in November next another great political contest will be decided.

"Meantime, much illuminating debate will be indulged, pro and con, yet why should mere political chatter throw American business off its balance?

"We have but to examine the scarecrow carefully to realize that it is a dummy designed to frighten the timid.

"Neither man nor the Almighty respects

the whimperer and the whiner. The two-fisted fighter challenges the admiration of the world.

"Indeed, business is pretty much what we make it. Individual effort is a powerful factor. More 'pep' and less 'pessimism' is helpful. New ideas have been found efficacious by the comparatively few who have tried them.

"So, why 'view with alarm' the heart-throbs of a political campaign? Put more steam behind your blows, and increase your sales.

"The Hub has rounded out the first six months of Presidential year, 1924, with most gratifying results. * * *

That man, who, by the way, was one of the men who showed an increase in sales during 1920 and 1921 and who is making money today in the same line of business—that of retail clothing in Chicago—knows what he is talking about, for he is simply suggesting to you and to other merchants that you follow the same aggressive policy that he used with success four years ago and is using today—in this "presidential" year of 1924.

There is business to be developed this summer in your community.

There will be more business this fall and winter.

But unless you make suitable preparations to care for the business of the coming fall and winter somebody else will take away from you a considerable portion of even that which ordinarily comes without specific effort.

To be sure, this is not the time to place unusually large orders, but there is no reason whatever for hanging back and letting your stock run down on staple merchandise.

Go out and make an intelligent hunt for business.

And you will be pleasantly surprised as each month shows a better record.

Random Notes and Sketches.

By Sidney Arnold

Every father and mother will sympathize with President Coolidge and his wife in the loss of their young son. Words at such time may seem so utterly vain, but it appears to me that no better sermon could be preached than the verse recited by the pastor of their church, the Reverend J. Jason Noble Pierce, taken from that beautiful poem of James Whitcomb Riley, entitled, "Away":

"I cannot say, I will not say,
That he is dead—he is just away!
With that cheery smile, and a wave
of the hand,
He has wandered into an unknown
land,
And left us dreaming how very fair
It needs must be, since he lingers
there."

* * *

I have a long letter from S. P. Moncrief, president of the Sheet Metal Contractors' Association of Georgia, in which he tells about the fine trip he had after the national convention in Washington, when he visited New York city, Niagara Falls and spent a few days with his brother, "Dick" (E. S.) Moncrief, in Cleveland, arriving home the first of July.

On the evening of the Fourth he watched a baseball game, in which his home team won, but whether it was because of the excitement or because of the watermelons, or ice cream cones, or something else, he can't tell, at any rate "S. P." was taken sick and had to be carried home in an auto. However, he is out again and well enough to register a kick.

For fear that he may not give me the combination of his private locker when I get to Atlanta for the 1925 National Sheet Metal Contractors' convention, I state here and now that it will be held in the latter part of June in the city of Atlanta, the metropolis of the great state of Georgia.

Incidentally—after his kick—he pats us on the back by telling us that AMERICAN ARTISAN should be read by every sheet metal contractor, because of the great mass of helpful information it contains.

* * *

Charlie Gohmann, he of "Pointer" range fame, always was a unique fellow. I have never seen him with a new overcoat, but he always has a different one when I see him in the fall. He will make only one style of ranges. He discarded hand-molding. He smokes corn cob pipes, and now he comes around with a greeting like this:

Some folks greet you Christmas,

Others New Year's Day,
And some upon Thanksgiving,

In a cordial, Thankful way.
But we prefer on July Fourth

Our good-will debts to pay
And thank our stars we're living
In the good Old U. S. A.

* * *

During the National Sheet Metal Convention in Washington, George Harms had many things to say about cornices and prodigal sons, but one day at lunch he and Bill Fingles, together with three or four others, myself included, were discussing the art of making estimates and he contributed by telling the story of a young wife, operating on a budget, who entered in the account book the following notations: Ham, \$5.40; dress, \$41.50; G. O. K., \$1.80; G. O. K., \$10.21; G. O. K., \$7.30.

"What is this G. O. K.?" enquired friend husband.

"Oh, that means 'God only knows'—I spent the money."

George is of the opinion that some sheet metal contractors ought to provide a column for "G. O. K.," judging by the price some of them ask for their jobs.

* * *

C. C. Peffley, the Clark-Jewel range man, was hungry as a wolf, due to an early morning dash for

his train that had forced him to forego his breakfast. At noon he hurried to the dining car and managed to obtain a seat. He called a waiter over.

"Now," he ordered, "I want oysters on the half-shell, in a hurry."

"Yessuh, right away, suh," assured the waiter, hurrying off.

Five minutes passed, and five more; still no oysters appeared. With growing impatience he summoned the waiter.

"I ordered oysters on the half-shell. Where are they?" he demanded.

The waiter looked embarrassed.

"Well, yo' see, suh," he said at length, leaning over and confidentially lowering his voice, "we're jus' a bit sho't on shells today, but yo' o'der is nex' on de list."

* * *

Here is a good piece of news from the recent Democratic Convention:

I am in receipt of a wire signed by A. E. Rudolphi and Arthur P. Lamneck to the effect that in spite of the tremendous expenses under which these two valiant "defenders of the faith" were during the almost three weeks of that memorable occasion, there will be no advance on Rudy furnaces nor on Lamneck pipes and fittings.

I expect to receive a full report of the "inside doings" from Arthur when I see him next week at the Ohio Sheet Metal Contractors' Convention in Columbus and shall pass as much of it on as is fit for publication.

* * *

George I. Ray, secretary of the Tri-State Association of Sheet Metal Contractors, took a friend out hunting last spring when they noticed a sign on a post near the road:

"Trespaser's will be persekuted to the full extent of 2 mean mongral dorgs which ain't never been ovarly soshibil with strangers and 1 dubbel barelt shot-gun which ain't loaded with no sofy pillers. Dam, if I ain't tired of this hel raisin on my prop-uty."

Whipp Explains Some of the Common Faults in Fan Design and Application.

Says Many Engineers Believe It Only Necessary to Increase Speed of Fan to Create Proper Suction.

THIS is the fifth of a series of articles comprising the address on creating proper fan suction, by Frederick G. Whipp. The fourth installment appeared in our May 31st issue, page 13.

The set of diagrams will show clearly the conditions occurring within the bearings with various methods of driving. They are more or less exaggerated for the sake of clearness. In Diagram 1, No. 1 shows the journal at rest and when in this position the lubrication is at its correct position, but as machinery is not made to stand still, this diagram is not of much practical use.

No. 2 shows the state of affairs with a top drive where insufficient slope has been allowed. It will be seen that to all intents and purposes the lubricating port is completely closed; result, hot running bearing and short life, and a very likely possibility of maker being blamed for supplying an inferior bearing metal.

The dotted channel is the correct position for lubrication entrance with a drive of this description. With such an adjustment, however, the drive is a bad one, as the belt would have to be kept excessively tight in order to overcome slip and the bearing would be subjected to greater pressure in one direction in consequence.

No. 3 is a similar example, but with more slope of belt; but even in this case a diagonally arranged bearing is called for.

Nos. 4 and 5 show a purely horizontal drive and from the lubricating standpoint we have now eradicated the fault at any rate in Figure 4, where the direction of rotation is such that the lubricating medium enters the bearing in a direction towards the lower pressure zone, for, of course, the direction of rotation will also be the direction of lubri-

cant flow. In Figure 5 the driving agency is on the opposite side and consequently the shaft is pulled to the other side of the bearing, causing a decrease in space between the running surfaces at a point C, which represents a resistance to the ready flow of oil. Although the lubricating question is more or less settled by these methods of drive arrangement, they should not be employed with ordinary split bearings, but diagonal housing should be provided; this for constructional considerations, so that the pull is not directed upon the split part of the bearings.

No. 6 shows the best type of drive for all-round work. The pull is obliquely downwards a little below the division of the bearings, and the lubricating port is quite free and under a minimum pressure, and the running clearance increases in the direction of rotation, allowing a ready flow of lubricant.

It will be noticed that Figures 4, 5 and 6 are represented with their shafts less eccentrically inclined, as is the case in Nos. 1, 2 and 3, because it is held that this is the actual state of affairs one may expect in practice, because the nearer the ideal driving position is approached the slacker can the belt be, and consequently less intense the pull, whilst with badly arranged drives the inevitable slip has to be overcome by excessive tightening of the belt, hence an abnormal pull and the conclusion above arrived at.

With ring lubricated bearing the question of lubrication as above discussed is independent of driving conditions, so calls for no mention here, but the importance of driving position and belt tension is equally applicable.

Ball bearings are now being more extensively employed for fan work than hitherto, and one of their chief assets is low maintenance cost. Very

little lubricating is needed, as once the housings are packed with a good neutral grease they can be left to their own devices for six months or even longer, so long as adequate provision has been made in designing their housings for dust exclusion caps and washers. There are a few points, however, in their fitting up to a fan shaft that may be worth our while to consider in passing and to illustrate these please refer to diagram 2. The upper drawing shows the correct method of mounting a set of Shefko bearings which include a system of double acting thrust washers.

A separate thrust system is only necessary in fairly large fans, as in all normal fan work the thrust is only moderate and can easily be sustained by one of the radial ball bearings, as will be explained. It is a common error when fitting up an outfit of this kind to clamp the radial bearings at their outer races as shown in the lower drawing. Such a procedure prevents any lateral movement of the shaft, and immediately the fan is running all the radial bearings are being subjected to a lateral or thrust load, and the thrust bearing cannot fulfill its functions. There is also the danger of an initial thrust load being brought on the radial bearings owing to some degree of inaccuracy in the machining of the various parts.

As much as lateral freedom is essential for the radial bearings, so is axial freedom necessary in the case of the thrust system and for reasons exactly opposite to those enumerated in the previous case, which is to prevent any radial load being brought to bear upon the thrust bearing.

In light and moderate fan work a thrust bearing is seldom necessary, and in such cases the lateral thrust load is reacted by one only of the radial bearings, in which instance the outer race is clamped up as well as the inner one. A double row bearing of the type illustrated is capable of reacting a thrust load up to about 25 per cent of difference between its total safe radial capacity and the radial load actually being

sustained, which means that its total capacity for thrust load is 25 per cent that of its radial load capacity.

When clamping of the outer race is mentioned, this does not mean spanner clamped, as there should always be an actual clearance to prevent mechanical strains being set up in the ball-race when the latter heats up.

Besides the friction reducing qualifications of ball bearings there is a special reason why, in the author's opinion, they should find favor with fan makers.

Where high-water gauges are being worked at and ring oiled bearings are being employed, there is often a great difficulty experienced in keeping oil in the bearing long enough for it to perform its duty. Oil wastage is one thing, but in cases where solid matter is being handled and this has to be kept uncontaminated the oil throwing bearing simply cannot be tolerated, and although oil grooves, caps, etc., have been designed to prevent the oil entering the casing, it is a difficult job to isolate one part of the shaft from the other, and as this is the medium by which the oil enters the fan housing, only such an isolation is successful.

With ball bearings, however, this trouble can be averted, as in the first place a ball bearing running under 2,000 r. p. m. does not need oil at all, but only grease, and this speed covers easily most fan work under consideration, whilst secondly, as ball bearings do not wear appreciably during their period of usefulness, the running clearance between the shaft and bearing cover can be very small, and with the provision of a felt washer can be hermetically sealed.

This sealing facility also points in favor of applying ball bearings in dusty situations where the egress of foreign matter would be detrimental to other types of bearings.

Commercial or mechanical considerations, or both, sometimes necessitate a reduction of shaft diameter at the bearings, and in such cases the shaft is quite correctly reduced conically, which is another

inducement for the oil to travel along the shaft owing to the attraction due to the greater peripheral speed of the shaft as it is enlarged, and where such enlargement of spindles is made special precautions are necessary to arrest oil creeping.

Arising from the observation of correct belt drive previously discussed and stated to be best when in a slightly downward direction, is the matter of standard design, that is the standard or pedestal carrying the bearings of a pulley driven fan. If the fan is of the single bearing type with pulley overhung, the belt is free of any obstruction, but where two bearings are fitted the outer one is either carried on a pedestal supported at the ground level or else a cantilever bracket is provided which is sometimes fixed to the side of the fan housing. In either case, any part of the bracket occurring beneath the pulley should be sufficiently clear from it to permit of a downward drive being possible. The writer has come across fans where this clearance has been such that nothing less than an absolutely horizontal drive was permissible in order to allow safe clearance for belt fasteners.

On the other hand, however, the pedestal should not be so designed that it has a tendency to flimsiness in any way, and the casting should be a hefty one, as any undue vibration or movement will soon ruin the best bearing.

There are many fans on the market today, which are very satisfactory in every respect, with the exception that their bearing mortality is high and a great deal of this trouble is traceable to the fragile design of the bearing carrier pedestal which is not strong enough to withstand, without chattering, the pull of the belt. This chattering quickly destroys the oil retaining capacity of the bearing and leads to, or at least assists in, its destruction.

Centrifugal fans are generally divided into two classes, viz., paddle wheel and multi-vane type, and although the first named is the oldest form of runner, it still holds its position of importance today for cer-

tain classes of work. Both types are again divisible into single and double inlet models, but the author would again subdivide both patterns into the back plated and non-back plated type, and will endeavor to justify this policy.

Diagram 3, sketch 1, shows a paddle wheel of the straight-bladed variety, the blades being supported by central arms cast whole with the boss, whilst No. 2 is a similar arrangement in principle, but with side cheeks enclosing the blades. The first of these examples allows a considerable slip to occur between the blades and the casing, which is prevented in the second wheel by the side cheeks.

As, however, the open-bladed fan is usually employed for handling fibrous matter or comparatively large particles of refuse, the loss of efficiency is a secondary consideration in such installation.

Who Knows of an Oil Burner That Really Gives Satisfaction in a Warm Air Furnace?

Without comments, other than the request that the desired information be furnished to us for transmittal to our subscribers, we publish the following letter:

TO AMERICAN ARTISAN:

I have been watching the oil burner production for years and have tried several out, but all proved fakes.

However, I am still interested and have faith that one is made or will be made that will give proper results.

If AMERICAN ARTISAN or any of your readers know of an oil burner that is now giving satisfaction in heating plants commonly used in small country towns and rural districts I would consider it a personal favor if you would put me wise.

Yours truly,

L. E. MILLER.

—, Indiana, July 3, 1924.

If you know your business as you ought to know it, you know today what is good for it as well as you will know tomorrow.

Dr. Evans Squirms But Finally Admits That Somebody Slipped Something Over on Him.

He Asserts That Objectionable Article Was Inserted Without His Authorization.

OUR readers will recall the several articles published in AMERICAN ARTISAN during recent months calling attention to the misleading and untrue statements regarding warm air furnaces which appeared at that time rather frequently in the "How to Keep Well" column supposedly conducted by Dr. W. A. Evans in the *Chicago Tribune* and other newspapers in metropolitan centers.

We used "Italics" in printing the word "supposedly" in the preceding paragraph, because—according to Dr. Evans' own statement—at least one of the articles to which we objected had been inserted in his column without authorization or comment by him.

The following letter from L. Y. McAnney, sales promotion manager of the L. J. Mueller Furnace Company, shows that the way of the transgressor is hard, no matter whether he transgresses with malice aforethought or because of plain ignorance:

TO AMERICAN ARTISAN:

In connection with the discussion in AMERICAN ARTISAN on the article appearing in the *Chicago Tribune* over Dr. Evans' name, on the subject of carbon monoxide poisoning and warm air furnaces, you may be interested in the following:

On June 10th we wrote Dr. Evans a two and a half page letter, based on facts secured from our engineering department, showing the fallacy of the article quoted originally in Dr. Evans' column of April 21st.

We sent a copy of this letter to E. W. Parsons, advertising manager of the *Tribune*, who suggested our writing direct to Dr. Evans.

June 21st, Dr. Evans answered our letter, expressing amusement at our attitude and pointing out that the contribution signed "W. H. H." had been inserted in his column

without "authorization or comment by him."

Following this up we have written him today and are sending a copy of Dr. Evans' letter to us and our reply, again to Mr. Parsons, advertising manager of the *Tribune*.

So you see others are taking up the cudgels in the same fight and are not going to sit on the side lines and permit such ill-advised and unquoted statements to go by unchallenged.

Yours truly,

L. J. Mueller Furnace Company.

L. Y. McANNEY.

Sales Promotion Manager.

Faulty Cold Air Ducts Cause More Trouble in Furnace Jobs Than Any Other Thing.

Rudy Heating Engineer Shows Way of Constructing Box Heads to Permit Full Flow of Air.

THE RUDY FURNACE COMPANY, Dowagiac, Michigan, through their heating engineer, T. W. Torr, supply their dealers from time to time with articles, each one dealing with some phase of furnace installation in a common sense, non-technical manner.

These non-technical chats have proven of such value to Rudy deal-

Oshkosh Sheet Metal Contractor Secures Contract for Installation of One Hundred Furnaces.

A contract for heating 100 homes with warm air furnaces at Iron Mountain, Michigan, for the Ford Motor Company, has just been awarded to the Teela Sheet Metal Works, Oshkosh, Wisconsin. These houses are being rushed to completion on the basis of finishing one a day. Cast iron furnaces made by the Brillion Iron Works, Brillion, Wisconsin, will be used, while the Dunning Heating Supply Company, Milwaukee, will furnish Kwik-Lok pipe and fittings and "National" registers throughout, as well as the cold air faces. All of the houses will be of frame construction, but of different types.

The prospect who inquires has lowered his guard.

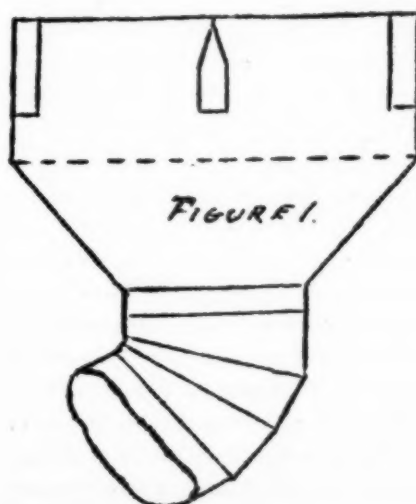
ers in suggesting ways for carrying out the details of installations, that we feel sure they will be of interest to the trade in general and so we are pleased to reprint them by courtesy of Mr. Torr.

The first three articles will deal with the return air duct. There is no part of a gravity heating plant more important than the return air system. Probably more installations cause trouble through faulty return air duct construction than from any other one thing.

The first of this series appears herewith:

Construction of Cold Air Box. Right Way. Wrong Way.

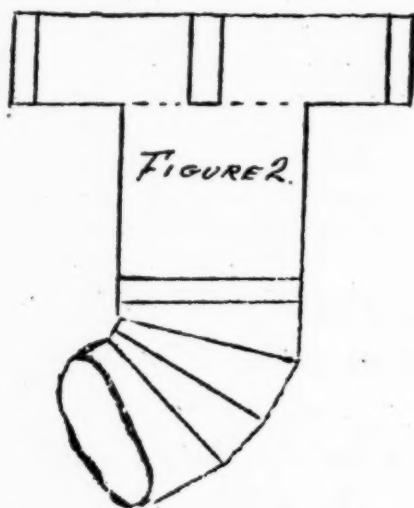
The use of a funnel box for a cold air head is responsible for the success of the duct constructed as shown in Figure 1. The ordinary head (as shown in Figure 2) is very much less efficient. The four corners are almost sure to be dead and



if not entirely inactive so sluggish that they cut down quite an appreciable percentage of the air which is supposed to go through the face.

Having the center joist directly across the center of round pipe is more than likely to stop the flow of air through one or the other halves of the face. Placing the face so the joist does not pass through the center of the round pipe invariably renders that part of the face which has access to the smaller opening of the round pipe absolutely useless.

Cutting away part of the joist, either top or bottom, does very lit-



tle good. It is the deep space below it as shown in Figure 1, that permits the face to be fully efficient.

The other construction must be very liberally discounted. Many times it represents but half the value it should for returning a full volume of air to the furnace.

Conditions may make it necessary to vary the shape of the cold air box, but the fundamental principle remains the same. Adequate space must be maintained with full width and breadth of the face well below the joist before connecting the round pipe, to insure the face being fully efficient.

Roy R. Wilson Advertises to Acquaint Public of Coming Furnace Improvements.

Any written statement when clothed in the garb of specialty is always sure to attract attention. The word "Notice" is itself an attention compelling word. It arouses curi-

osity in the drowsiest of individuals, and when not too frequently used in the same form it can be depended upon to produce results.

The accompanying advertisement, taken from the *Decatur, Illinois, Herald*, is an excellent example of an advertisement constructed along

old one does need an introduction, there is no denying that, and the advertisement is the quickest and most efficient means permitting the "debutant to come out."

Use the advertisement properly and it will work for you to your advantage. Mistreat it and it will, like

Notice to Homebuilders And Contractors

Something New!

We will soon announce the most sweeping and revolutionary improvement in

WARM AIR FURNACES

Effected in the last 25 years. It will be of vital importance to everyone who heats a home.

WATCH FOR IT!

Roy R. Wilson

HARDWARE AND FURNACES

143 East Main St.

Warm Air Furnace Advertisement Prepares the Way for the Coming Improvement.

the lines of a special notice. "Something New," too, has its appeal.

An advertisement of this type, if persistently used before bringing out the new improvement, will arouse interest to such a degree that by the time the store is ready to display the article, every one is conversant with it, and as a consequence greater interest will be shown in the improved article. How many, many inventors there are who have not had the gratification of seeing the product of their labors come into universal use, simply because they were unable to adequately finance an advertising campaign so as to properly introduce the article before putting it on the market.

The new article or the improved

an unruly horse, eat its head off without producing anything.

A. B. Blomquist Wants a Few Questions Answered.

The following letter has been received from one of our subscribers:

Please answer these questions for me:

1. What advantage has galvanized iron pipe and fittings over tin?
2. Will tin pipes not insulated rust out in the basement?

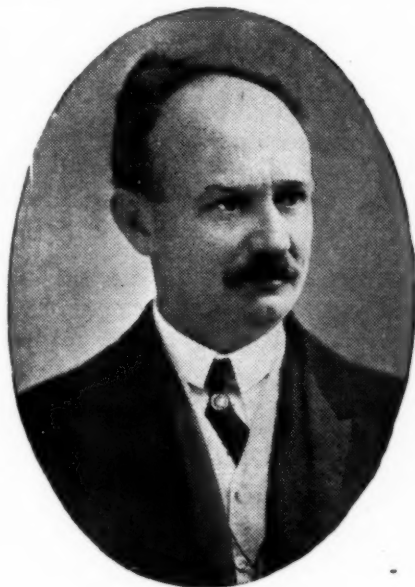
A. B. BLOOMQUIST.

If you think you are working very hard the chances are you are not. The hardest workers don't look upon work as work.

Frank Miller and H. L. Hoffman Are Now in Full Charge of Schill Brothers Company.

Mr. Miller Is President and General Manager, and Mr. Hoffman Is Promoted to General Sales Manager.

On July first two important changes took place in the management of Schill Brothers Company, Crestline, Ohio, manufacturers of warm air furnaces, stoves and



Frank Miller,
President and General Manager.

ranges, both as a result of the resignation of W. D. Cover, who is now in active charge of the furnace department of the Cooperative Stove Company, Cleveland.

Frank Miller, President of the Company since the death of William H. Weaver, about four years ago, also became General Manager. While Mr. Miller had never been active in the business end of the Company, he has been an officer since its reorganization nearly twenty years ago. He was a member of the committee which was appointed by the creditors and stockholders for a reorganization of the Company at that time and he has been identified with the concern ever since, as Treasurer, Vice-President and Treasurer, President, and now President and General Manager. He has had an opportunity to familiarize himself with the furnace and stove industry and will be able to take hold of the work

with a good understanding of the business. He begins his managerial career optimistic of the future and hopes to be going strong before the year is over.

H. L. Hoffman, who becomes General Sales Manager, has had charge of the sale of stoves for several years, but will now have the responsibility of selling the entire product of the Schill Brothers Company. Mr. Hoffman has been with the Company about twenty-five years, working very largely in the sales department and there are not very many large retailers throughout the West and Northwest with whom he has not become well acquainted.

He has studied the manufacturing end of the business thoroughly and there are few men in the country so well acquainted with the production and sale of stoves and furnaces. He carries into his enlarged field an enthusiasm and energy,



H. L. Hoffman,
General Sales Manager.

which will spell success for his future efforts. He is very popular with the numerous clients of the Company who will be pleased to learn of his promotion and extend to him their good wishes.

As Mr. Cover retains his place on the board of directors the balance of the official family remains undisturbed.

Actively engaged at the plant, Leroy Smith continues to hold the position of General Superintendent which he has filled so capably for many years. W. F. Weaver is the Traffic Manager and Leo Weaver is the Cost Adviser and Purchasing Agent. Both these young men have been with the plant for a long time and hold important positions in the working of the big plant.

American Institute to Hold Big Exposition of Inventions at New York City December 8 to 13.

Manufacturers in every American industry will be interested in the Exposition of Inventions to be held December 8th to 13th, inclusive, 1924, in the famous Engineering Societies Building, 47 West 34th Street, New York city. The American Institute of the City of New York is handling this display through its inventors' section, with behind it an experience of ninety-six years in fostering and portraying American industrial life.

A feature of the exposition will be exhibits from the leading American industries showing developments of various machines, utilities and processing methods. In all fields the ingenuity of the inventor and the part he has played in the progress of America will be emphasized.

In this display of American inventions the American Institute will be continuing with a new emphasis almost a century's encouragement of inventors and introduction of their works to the public. Among inventions now used throughout the world that were first displayed to the public at earlier all-American fairs of the institute are the Morse telegraph, the Hoe lightning printing press, the McCormick reaper, the Howe sewing machine, the Bell telephone, the Colt revolver, the Francis metallic life boat, and many others.

Good advertising is never wasted.

Wisconsin Furnace Installer Successfully Promotes Furnace Demonstration.

Fuel Economy Feature Emphasized and Exploited by Factory Representative.

THE HEADLINE of an advertisement generally, though not always, is relied upon to attract enough attention and arouse sufficient interest to insure further reading.

Upon this authorities of advertisement building are agreed. Figuring from a psychological point of view, too, we can readily understand why this is so.

When writing an advertisement, the builder asks himself the question: "Into what channel of thought do I wish to divert the mind of my reader whose eyes are wandering over the page upon which my advertisement will appear? How must I appeal to the sympathetic senses of a potential customer?"

These are only some of the thoughts that pass through the mind

of the advertisement builder while he is at work. He has a clear picture in his mind of a man, perhaps, in middle life sitting in his chair at home or on a car going to his office and reading the paper.

In the accompanying advertisement, taken from a Wisconsin paper, the ad builder in cogitating upon a head that would do the trick he hit upon the economy appeal and said: "Settle Your Heating Problem Now!" Immediately the home owner becomes interested. Wants to know how he's going to prevent wasting that much fuel. Didn't know he was. Always used utmost care in firing the furnace, etc.

Still he's curious to know how it's being done and reads on. Takes out his note book, jots down the address of the place.

The ad has done its work. It has aroused the curiosity of a prospective customer to a point where he is willing to pay in terms of time and perhaps car fare for the privilege of seeing something you have to sell. The rest is up to you.

The advertisement was taken from the Racine, Wisconsin, *Journal*.

Settle Your Heating Problem Now!

\$99⁵⁰

INSTALLED (Cash Price)



THE "SIMPLEX" PIPELESS MADE IN RACINE

No need to longer deny yourself the comfort, economy and convenience of Warm Air Heating when you can have a "Simplex" installed in your home and pay for it by making

Small Monthly Payments

May we talk the matter over with you? May we show you all the important advantages of this heating system and tell you about our convenient payment plan?

MOHR-JONES

RACINE'S LEADING HARDWARE STORE

Installers of Pipe and Pipeless Warm Air Furnaces
Furnace Dept., 822 11th St. Phone Jackson 192

This Powdered Soap Is Fine for Sheet Metal Workers.

The Equipment Supply Company, Chicago, jobbers of sheet metal tools and supplies, have placed on the market a powdered soap under the name of "Hanskleen," which is especially suited for sheet metal workers and other mechanics, as well as for auto owners and others whose hands are likely to get unusually dirty.

It is claimed that "Hanskleen" will remove almost anything from the hands without injuring the most delicate skin.

Sample packages and full information may be secured by writing to Equipment Supply Company, 326 South Federal Street, Chicago.

The foundation of business is confidence, which springs from integrity, fair dealing, efficient service and mutual benefit.

Settling that Heating Problem Now as It Is Done In Wisconsin.

Depicting the Transition from Stone and Brick to Sheet Metal Cornices During Four Centuries.

Showing Architects How Safety and Economy Can Be Effected Without Sacrificing Beauty in the Matter of Cornices.

GEORGE HARMS, who needs no further introduction in the sheet metal trade, and who takes in all the conventions, has had a lot to say recently about the Return of the Prodigal Son of the sheet metal industry, and needless to say he believes the return will be accomplished.

Men, through the ages, have striven to first construct and then beautify. From the middle of the fifteenth century on, the materials used for cornices have largely been of stone and brick. But we all know that the tendency of the present day is to substitute the sheet metal cornices.

We also know of the efforts sheet metal contractors' associations are making to engage the interest of architects in sheet metal cornices.

The following article by Harry L. Termansen, taken from the June issue of the *Pure Iron Era*, the magazine of industrial conservation of the American Rolling Mill Company, will be of particular interest to the readers of *AMERICAN ARTISAN* because it deals with the history of building cornices through the ages since the fifteenth century and also with the transition from stone and brick to sheet metal cornices:

Cornices of Yesterday and Today:

To Michelangelo Buonarroti, architect, the world owes almost as much as to Michelangelo Buonarroti, sculptor and painter. Whoever would trace the history and development of prominent features of present day architecture is quite likely to find that somewhere it has been touched by the hand of that master craftsman in things beautiful. It is not surprising, therefore,

that in a brief study of the cornice, which a leading authority on architecture today has called, "the supreme expression of an architect's genius," we should find that the most beautiful example of it was the work of the supreme master of chisel and brush.

That particular example of the highest art in cornice construction is on the Farnese Palace in Rome. While Antonio da Sangallo lived, Pope Paul III permitted him to con-

ever, have in different countries and climates modified the shape and size of its parts.

The cornice is sometimes confused with entablature. The latter really includes the architrave or epistyle which rests immediately upon the abaci of the columns, the frieze, which rests upon the architrave, and the third course, which is the cornice proper. This uppermost member is the front or exterior face of the horizontal course

of stone which at first carried the beams of the roof and also the gutter which received the roof water.

The word "cornice" really has quite a variety of meanings, but for our purpose we will confine it to exterior architectural features of a building. In architecture other than Greco-Roman and its imitations, a cornice is the uppermost feature of a wall of masonry, usually a slab of stone projecting a few

inches from the face of the wall and supported, or apparently supported, where it overhangs, by corbels. Such a cornice may or may not carry a gutter.

In the fully developed Gothic style, the cornice generally consists of three members; first and lowest, a sculptured band; second, a drip moulding of considerable projection, the hollow beneath which forms a line of shadow; and third, the steeply inclined weathering above, which is continued either to the gutter, or is carried up high enough to form the face for the gutter cut in the stone behind it.

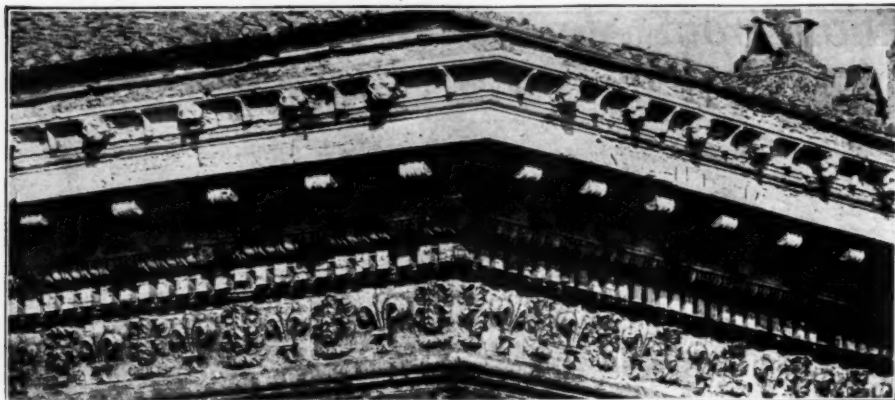
In some high modern buildings with flat roofs the decorative architectural effect is secured by a parapet rather than a wide projection of the cornice.



An Interior in the Patti Gallery, Hall of Mars, Florence, Italy. Italian Cornices Are Considered the Most Beautiful in the World.

tinue the building of the great Farnese Palace, but it was his wish that the upper cornice on the outside should be added by Michelangelo after his own design and under his own direction. Upon the death of Antonio, Michelangelo presented a wooden model of a cornice for the building. Its unusual beauty and appropriateness was immediately recognized and the construction of the cornice begun, following the model exactly. It is one-eighteenth of the total height of the building, whose facade is ninety-eight feet high, and is generally conceded today as the most beautiful and varied cornice ever erected by ancients or moderns.

The best known cornices range from about one-twentieth to one-tenth of the total height of the buildings. Practical considerations, how-



A View of the Famous Michelangelo Buonarroti Cornice on the Farnese Palace, in Rome, Italy, Said to Be the Most Beautiful in the World.

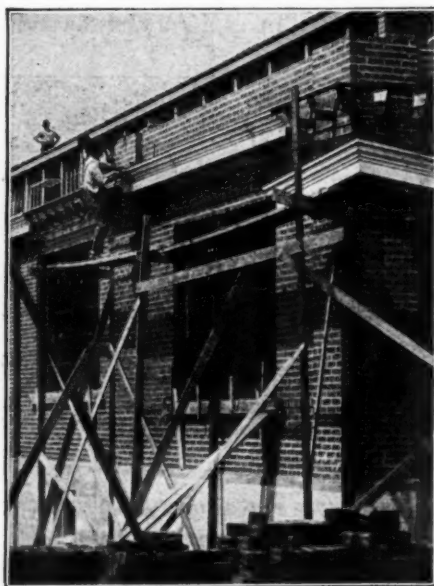
What is sometimes known as a roof cornice, may be described as so much of the roof as projects beyond the face of the wall and which affords shelter to the uppermost windows in addition to providing a shadow. It is the eaves treated in a decorative way.

The main parts of the cornice itself, are sometimes known as the bedmold, the corona, and the cymatium, and also as the crowning cornice, architrave cornice, and block cornice. Upon the projection of the corona depends much of the effect of the cornice due to the shadow it casts.

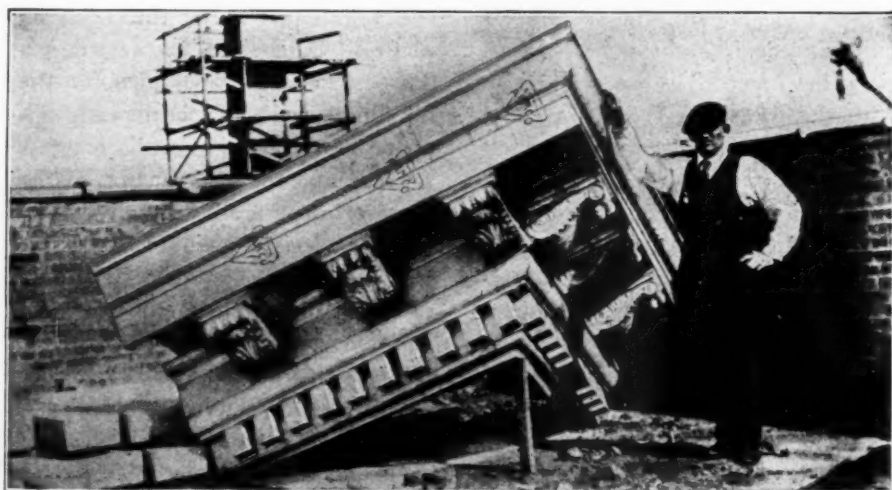
As applied to present day city structures, the cornice is a development of the Italian builders of the fifteenth century; in fact, its real beginning may be placed in the year 1440 in Florence. Some of the most noted examples of present day buildings which owe their cornice designs to the Italian architects of the fifteenth century are the University Club of New York city, which as treated by the architects McKim, Mead & White, is said to exceed its Italian prototypes in beauty; the Metropolitan Club, whose cornice follows the design of that on the Farnese Palace in Rome; and the *Leader News* Building in Cleveland, whose cornice has been called an example of "consummately proportioned composition," though having a little flatness and lack of depth due to local building restrictions. The height of this building is 190 feet, of which the cornice takes up one-twentieth.

Stone, brick and wood entered

into the construction of the prototypes of modern cornices, but today a large proportion are of metal, principally because of the two fac-



Erecting a Box Cornice, Made of Commercially Pure Iron, on the Greeno Building, Cincinnati, Ohio.



A Well Designed Metal Cornice and Miter, Manufactured of "Armco" Ingot Iron for the Y. M. C. A. Building, Sioux Falls, South Dakota.

tors of economy and safety. The beauty of a cornice depends not only on the specific features of the design itself, but also on the play of lights and shadows, and in order to have the cornices in proportion on the high modern structures the great projection from the face of the wall in the cast of stone and brick not only becomes dangerous, but also expensive in the matter of proper anchorage. In order to guard against the falling of heavy stone and brick cornices, many cities now have building ordinance restricting the extent of the projection of cornices from the sides of buildings.

With the constantly increasing use of sheet metal has come a larger and more skilled class of metal workers capable of faithfully reproducing beautiful designs, anchoring them firmly to the building, and so constructed as to prevent the dripping of water from one part to another and thus along the wall of the building. Though largely a decorative feature, the cornice serves to protect the body of the wall from wet and to throw the rain water from the roof beyond the face of the building, and in hot countries the cornice or capping receives a considerable projection for the sake of the shade as well.

Permanency and continuity of service are basic aims of business, that knowledge gained may be fully utilized, confidence established and efficiency increased.

Canadian Sheet Metal Producers Cooperate in Financing Advertising Campaign.

Copy Confines Itself to Metal Ceilings, But Goes Into Every Angle of That Subject.

SOMETIMES we think that we know more than anybody else about advertising, but ever so often somebody hands us a knock on the head with a stunt that shows that, in this case at least, he is ahead of us.

For example, we have been talking for a long time about the necessity for doing some coöperative advertising to the consumer about the merits of sheet metal as a building

Metallic Roofing Company of Canada, Limited, Toronto.

Metal Shingle and Siding Company, Limited, Preston.

Galt Art Metal Company, Galt.
MacFarlane Douglas, Limited, Ottawa.

Pedlar People, Limited, Oshawa.
All of Ontario, Canada.

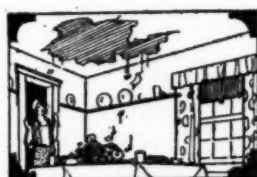
The appropriation for this advertising is not very large, and on that account the size of the advertise-

types of buildings in as brief a manner as possible. You will also notice that the design of each advertisement is practically the same, thus assuring a continuity of impression, which we believe to be one of the most important features in any advertising of this character.

This advertising runs twice a week in each newspaper on the list. It commenced early in May, but will be omitted during the latter half of June, all of July and August, and will recommence early in September, continuing until quite late in the fall.

Norris-Patterson, Limited.

W. F. RALPH.



This Can't Happen
when the room has a

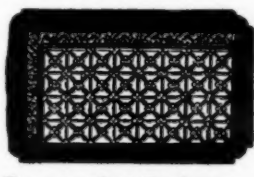
Metal Ceiling

Once on it stays on—lasts as long as the house. Unaffected by steam or moisture. Never cracks or falls off. Fireproof and timeproof. Washed with soap and water—always clean and sanitary. Suitable for any room and positively ideal for stores.

**Put on over old plaster
no mess, no dust!**

Easily put on and, once on, absolutely permanent. Your choice of many beautiful patterns.

Ask your Tinsmith



Beauty that Endures
That's what you get when you put on

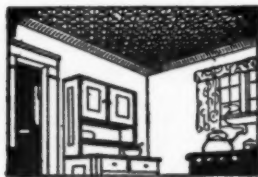
Metal Ceiling

Made from light steel plates, embossed into artistic patterns. Ideal for stores, kitchens, bathrooms, or any room in the house. Unaffected by steam or moisture. Never crack or fall off. Washed with soap and water—always clean and sanitary.

**Put on over old plaster
no mess, no dust!**

Easily put on and, once on, absolutely permanent. Your choice of many beautiful patterns.

Ask your Tinsmith



Metal Ceilings for kitchens

Unaffected by steam or moisture. Never crack or fall off. Fireproof and timeproof. Washed with soap and water—always clean and sanitary. Also suitable for any room in the house and positively ideal for stores.

**Put on over old plaster
no mess, no dust!**

Easily put on and, once on, absolutely permanent. Your choice of many beautiful patterns.

Ask your Tinsmith

Samples of One-Column Advertisements on Metal Ceilings.

material, and here comes a bunch of newspaper ads that are financed by five of the leading roofing manufacturers and distributors in Canada.

The following letter from Norris-Patterson, Limited, Advertising Agency, Toronto, which has charge of the campaign, will be of interest to the trade:

TO AMERICAN ARTISAN:

Answering your favor of the 11th instant, relating to the metal ceiling advertising being carried on by us for the sheet metal council, we may say that the firms participating in this campaign are as follows:

ments are necessarily kept very small, and the list of newspapers very restricted. We are using 2,000 lines in a number of city newspapers, and the copy has been standardized at 75 lines single column. While this space is small, it possesses the advantage of getting us extra good position with nearly every insertion. The only product being featured in this copy, as you will see from the proofs which are enclosed, is metal ceiling, and the endeavor has been made to cover all the advantages which accrue from the use of metal ceilings in various

New Jersey Zinc Company Will Expand Their Line of Products.

It has been learned that the New Jersey Zinc Company is building a rolling mill at Palmerton, Pennsylvania, for the rolling of zinc sheets. The decision is the result of long and deliberate consideration and a thorough analysis of the field. Many requests have come from the trade for such a service, and it is believed that the entry into the field of such a concern as the New Jersey Zinc Company will be well received by the industry. For a number of years this Company has been building up a national prestige by supplying the trade with strips, rolled from zinc slabs. A large percentage of this production has been utilized by fabrication of spouting and gutters and standing-seam roofing.

It is expected that the Company with in a short time will be large producers of corrugated and plain zinc sheets and will supply the trade with standard sizes and gauges in addition to the narrow strips and ribbons now made by the Company.

It will be of interest to the trade to know that this new plant will be centrally located and served by trunk line connections, so it will be in position to make prompt shipments to any point.

The executive offices of the Company are located at 160 Front Street, New York City.

Constructing Pyramidal Intersections Is Not Different in Principle from the Ordinary Tee.

Kothe Shows How Patterns for Pyramidal Intersections Can be Made with Little Difficulty.

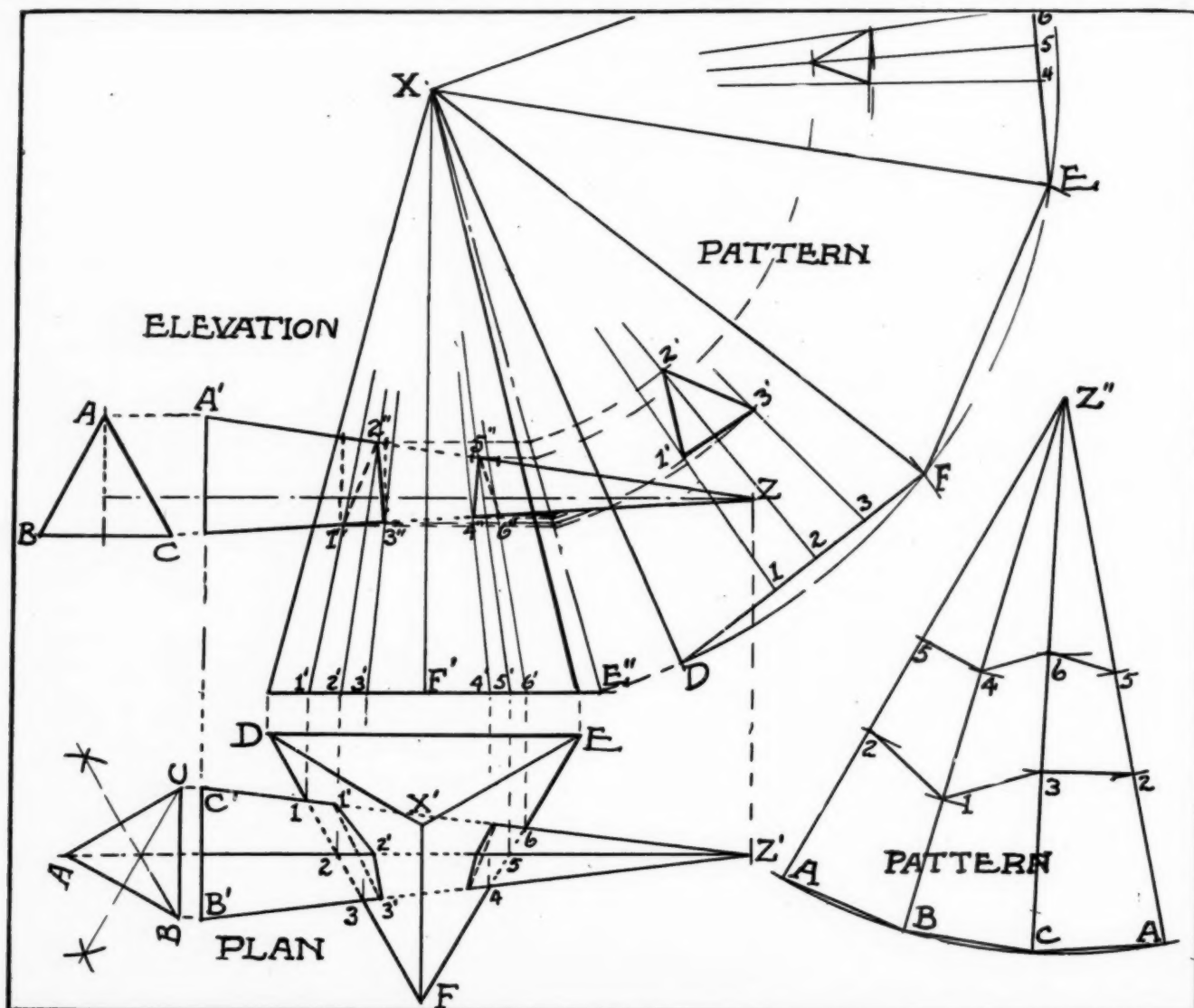
Written Especially for AMERICAN ARTISAN by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

SHEET METAL workers are often interested in the intersections of pyramids, especially of varying sizes and shapes. Problems such as we show in this drawing are not in the least different in principle from ordinary tee intersections between round pipes of unequal diameters. The main thing here is that we have a different shape, such as is not always met with and is, therefore, extraordinary!

We first draw the plan of the central pyramid D-E-F, with the hip lines leading to X'. Then we erect

the elevation, making it any height, as X. After this we draw the section for the smaller pyramid, in this case placing it horizontal, as the center line Z shows, while the section is shown by section A-B-C. When these outlines are drawn through the elevation, we reverse the section A-B-C in the position shown by the plan and from Z we drop line to Z', which is the position to intersect the large pyramid in this case. Now, where the lines of the smaller pyramid intersect the base line D-F and E-F as in points

1-2-3 also 4-5-6, erect lines to the base of elevation as 1'-2'-3'; also 4'-5'-6'. From here radiate them to the apex X to run past the horizontal pyramid. At the intersections thus produced as at 1''-2''-3'' also 4''-5''-6'' we draw the lines which shows the points of penetration between the small pyramid and the large one in the elevation. These are the miter lines and when we drop lines from these points into the plan, thus cutting lines of similar number as in point 1'-2'-3' in plan, it enables us to draw the miter



Making a Pyramidal Intersection.

line in plan between the intersections of the pyramid.

In looking at our plan we see that neither side line of elevation is a true length since the hip lines X'-E or X'-D run diagonal to our view. So we pick this hip line X'-E and set it on the base line of elevation as F'-E". Then line X-E" is the true length with which to describe the arc for pattern. When this is done, pick the plan lines D-F-E-D and step off on this arc as shown, drawing lines to X, which gives the pattern for the body of pyramid. To set the opening in these patterns pick the points D-1, D-2, D-3, from plan and set as D-1-2-3 in pattern. Repeat this for the side F-E as E-4-5-6 and draw lines to X. Now, in the elevation miter lines we must bring these altitudinal points over to the true length line X-E in a horizontal position. When this is done they can be described over into the stretchout of pattern and at the intersection 1'-2'-3', etc., the outlines can be drawn in which gives the pattern for opening.

To set out the pattern for the small pyramid or a pattern for either end, we observe that the elevation line A'-Z is a true length because the hip line in elevation is square with the position, while in plan they are diagonal and therefore not true lengths. Also observe that the points 1"-3" also 4"-6" in elevation must be squared up to intersect the point A'-Z, which puts these intersecting points in the correct position on the true lengths. Now setting dividers to Z-A' and using any place as Z" as center we strike an arc as A-A. On this arc we measure the three sides of our pyramid as A-B-C, then draw lines to the apex Z". After this we pick the miter line positions from line Z-A' and set them in pattern in similar numbered lines as shown. Edges for seaming must be allowed extra and in forming this problem up the base triangle D-E-F should be set in the bottom pyramid so as to hold it in position. The same holds true with the small pyramid.

It costs money not to advertise.

Ohio Sheet Metal Contractors' Convention Program Is Full of Good Features.

*There Will Be Plenty of Chance for Discussion
and Also Good Measure of Fun and Sport.*

THE preliminary draft of the program for the annual convention of the Sheet Metal Contractors' Association of Ohio, which is to be held at the Southern Hotel, Columbus, July 22 and 24 inclusive, indicates that those who attend will not only have a busy time, but will be entertained in the proverbial Columbus sheet metal way.

See for yourselves:

Tuesday, July 22nd.

10:00 a. m.—Opening of the convention by the chairman, Arthur P. Lamneck.

Invocation—Reverend T. Lehman.

Song—"My Country 'Tis of Thee," led by the Scrap Iron Quartette.

Welcome to Columbus—Honorable George J. Karb.

Response—George Thesmacher.

11:00 a. m.—Appointment of convention committees.

12:30 to 1:30 p. m.—Recess.

1:30 p. m.—Report of the state president, report of the state treasurer, report of the state secretary.

2:45 p. m.—Address by E. W. Myers, assistant supervisor of trades and industries division, Ohio Board for Vocational Education, on "How the Public Schools of Ohio and Industry Can Coöperate in the Training and Education of Workers in the Sheet Metal Industry."

3:30 p. m.—Address by Malcolm Jennings, executive secretary, Ohio Manufacturers' Association and chairman Ohio Industrial Conference Board, on "The Sheet Metal Contractors' Responsibility in Public Affairs."

4:15 p. m.—Address by Thomas P. Kearns, chief, division of factory inspection, Industrial Commission of Ohio.

7:30 p. m.—Not yet completed, probably a business-social session for men.

Wednesday, July 23rd.

9:00 a. m.—Song, "America."

Address by Phil S. Bradford, attorney-at-law, on "Industrial Associations; Mechanics Lien Law; Industrial Rights."

General session on cost accounting, led by Mr. Wiess, accountant with Beman, Thomas and Company, accountants and engineers.

Report of committees.

Election of officers.

1:30 p. m.—Outing (probably at one of the amusement parks).

6:30 p. m.—Dinner-dance-entertainment.

Thursday, July 24th.

9:00 a. m.—Song.

Report of committees.

Selection of next convention city.

Unfinished business.

Adjournment.

Milwaukee Sheet Metal Men Will Hold Annual Picnic on Thursday, August 14th.

At the regular July meeting of the Master Sheet Metal Contractors' Association of Milwaukee it was decided to hold the annual picnic on Thursday, August 14th, the place to be chosen within the next week or two.

Membership in the employers' council was continued for another year, John Bogenberger being selected again as a delegate.

A. R. Podolski, who was one of the delegates to the national convention in Washington, rendered a very fine report of the proceedings.

John Reynolds Is New Owner of Merrill Sheet Metal Works.

The Merrill Sheet Metal Works, 509 West Main Street, Merrill, Wisconsin, has been purchased by John Reynolds, who has been superintendent for George Pavlik, the former owner, for ten years.

three angles in any triangle, and the diameter of any circle represents the same sum.

We may divide the diameter into any desired proportion by means of a vertical erected at the point of division and secure the desired area or value thus represented.

In the present instance the proportion shall be as 1 : 2, so all that is necessary is that we divide the diameter representing the given pipe into three equal parts, erect a vertical at one point of division, then, if only the square is to be used, just shove the point of the square along the vertical until the "legs" touch the diameter ends: the reading on the legs will show the resultant diameters, if circles are considered, or these readings will show the sides of the two squares whose sum will equal the original pipe in area.

If the original pipe is shown in outline, the circumference given as well as diameter, then note the point of intersection of the vertical with the circumference, join that point to the diameter ends and take the readings on the square.

Should some "Doubting Thomas" demand proof, draw the rectangles AE-FD, and DC-GF: This divides the square in the desired proportion, each such rectangle being equal to its corresponding square on the triangle and their sum being equal to the area of the square on the diameter.

Divide the big pipe area into three.

Equal parts. Draw a square and see

That you divide it as One to Two

By a vertical line: That will do.

See that it to circumference is extended,

Get the "Point." "Hot Dog"; work is ended.

Now, say, "Why, my goodness gracious, Ain't that simple and efficacious?"

J. P. BUCKWALTER.
Macon, Georgia.

Scott Sorrows Over Frye's Poor Imprisoned Man and Lends Helping Hand.

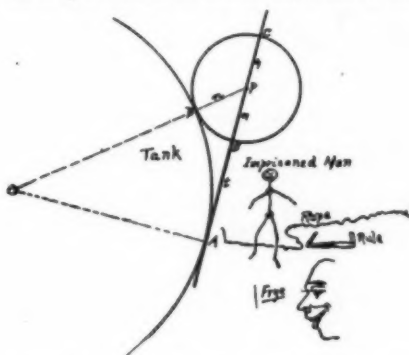
As we stand with bated breath anxiously waiting for Frye's tank man to figure his way out of the perilous position, we cannot help but appreciate how cruel the relentless Harry is.

But the man has many friends who are working frantically to release him before the terrible bread and water edict goes into effect.

The latest rescuer is William Scott, Juniata, Pennsylvania, who writes as follows:

TO AMERICAN ARTISAN:

Having worried over the sorrows of Frye's man in the hole, I have de-



termined to release him, and here's how:

From any point, as P, establish tangent AC by means of string, and with P as a center, using string, draw circle tangent to tank at D.

Measure AC and PC, and divide the one by the other.

Multiply the quotient obtained by the length of AB, and the result is the diameter of the tank. Apply the same method to the other tanks.

Let t equal AP.

Let n equal DP, BP and CP.

Let r equal OA, and OD, radii of tank.

Then, $r^2 + t^2 = (r + n)^2$.

$r^2 + t^2 = r^2 + 2rn + n^2$.

Whence $2rn = t^2 - n^2$.

Diameter of tank, $2r = \frac{t^2 - n^2}{n}$.

Factoring, $2r = (t + n)(t - n)$.

But $t + n = AC$.

And $t - n = AB$.

$n = PC$.

Substituting, $AC \times AB = 2r$, or

PC

diameter of tank.

Application.

Measuring AC, it is found to be, say ten feet, and PC is one foot. Dividing mentally, the quotient is 10.

AB is found to measure 8, and 8 times 10 is 80 feet, the diameter of the tank.

WILLIAM SCOTT.

Juniata, Pennsylvania.

Postpone Pullman Surcharge Hearing Until March 18.

The hearing on the question of Pullman surcharges has been postponed until March 18, when an effort will be made to finally conclude the taking of testimony. There are pending before Congress a number of measures providing for the elimination of the surcharges now collected for Pullman accommodations, and some action may be taken on one of these bills before the Interstate Commerce Commission holds its hearings.

Notes and Queries

Nickel and Silver Plating Outfit.
From I. R. Keller, Upper Sandusky, Ohio.

Please advise me where I can buy a small nickel and silver plating outfit.

Ans.—The Hanson and VanWinkle Company, 844 West Erie Street, Chicago, Illinois.

"Parker" Metal Punch.

From Lane Manufacturing Company, Grand Junction, Colorado.

Can you tell us who manufactures the "Parker" metal punch?

Ans.—Parker-Kalon Corporation, 352-362 West Thirteenth Street, New York city.

Address of International Refining and Manufacturing Company.

From T. L. Greif, Elizabethtown, Kentucky.

I should like to know where the International Refining and Manufacturing Company is located.

Ans.—2117 Greenleaf Avenue, Evanston, Illinois.

Builders' Hardware Booth Puts Hennepin Hardware in Line of Big Sales.

Annual Show Brings Thousands of People Past Hardware Booth—Increases Opportunity for Personal Contact.

WIDE-AWAKE hardware men are always on the lookout for opportunities to bring the prospective builder into close proximity with the store. He knows that the more often he can get his services used by the prospective builder the greater chance he has of ultimately making the sale.

Many people who are expecting to build do not feel free to go into a store and ask questions, believing that they are thus putting themselves under obligation to the storekeeper. This is not true of people in large cities who entertain no qualms about going into a store, asking as many questions as possible and then leaving without making a purchase or a thank you.

At a builders' show held in Minneapolis the Hennepin Hardware Company, Minneapolis, Minnesota, arranged the exhibit shown in the illustration and submitted to compete in the 1924 window display competition of AMERICAN ARTISAN

AND HARDWARE RECORD.

The show is an annual event and attracts thousands of people of all classes every year.

The display was made by W. H. Owen and, as is readily seen, it consisted of builders' hardware articles.

Many prospective builders stopped at the booth for information which later developed into sales for the company.

Many of these sales were the direct result of the exhibit at the show.

Frank G. Drew Is New President of Winchester Repeating Arms Company.

Frank G. Drew, who has served the Winchester Repeating Arms Company since January 1, 1903, and as a vice-president since 1916, has been chosen as president of that concern by the board of directors, succeeding John E. Otterson, resigned. Mr. Otterson has been president since 1919.

R. Earle Anderson also tendered his resignation as vice-president and William T. Birney was elected vice-president to succeed Mr. Drew and William A. Tobler, vice-president to succeed Mr. Anderson.

Announcement is also made that George A. Taylor will become general sales manager of the Winchester Repeating Arms Company, and that Edwin Pugsley will replace Whiteford Drake as factory superintendent.

Charles B. Chancellor Resigns from Baldwin Tool Works.

Charles B. Chancellor, who has been prominent in the hardware jobbing and mill supply trade for many years and since 1912 has served as sales manager of the Baldwin Tool Works, has resigned from that position.

"Farmer," as he is known to his multitude of friends, says that he is



W. H. Owen Arranges Attractive Builders' Hardware Booth at Minneapolis Show for Hennepin Hardware Company, 909 Hennepin Avenue, Minneapolis, Minnesota.

going to take a good rest, but expects to re-enter the same field

some time next year, just to keep in contact with his old customers.

Hamp Williams Reviews Great Work Accomplished During 1923 by National Retail Hardware Body.

Cites Campaign Against Faulty Text Books, Results in Simplification Work, as Examples of Its Influence.

THE following contains some of the "high spots" of the annual report of Hamp Williams, retiring president of the National Hardware Association, at its recent convention in San Francisco:

"During the year," Mr. Williams said, "we have renewed our efforts to eliminate wrong and harmful examples from the arithmetics used in our schools, examples which teach the wrong conception of business, and that retailers make exorbitant profits.

"We have sent letters to the presidents of colleges, to boards of public instruction, to the text book publishers, setting out the wrong teachings which exist and asking for revisions.

"These pleas have generally been accorded good receptions, but we can't stop there. Oh, no! If you want things done right you can't just say they ought to be done and let it go at that. Somebody has to do it.

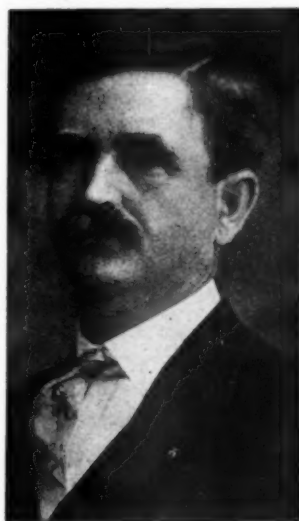
"A few weeks ago the school board for the state of Indiana was about to decide which books would be used in the schools of that state for the next five years. In coöperation with Secretary Sheely, of the Indiana Association, the National examined all the arithmetics that were offered the board. They pointed out the wrong examples which many contained. In fact, of fifteen arithmetics, only two were recommended in our report which was made to this school board.

Faulty Text Books Condemned.

"The text books which had been in use were condemned because of the wrong examples they contained and we had the satisfaction of seeing these books thrown out, after a hot fight in which more than fifty

ballots were taken, and the arithmetic recommended by the National Association was adopted.

"Now, National Headquarters has perfected plans to continue this same campaign. A few days after the Indiana contract was let, the representative of a prominent text book publisher called at headquarters to 'find out what the National Association was doing about text



Hamp Williams.

books, and what it wanted.' He knew we had been mixed up in the Indiana deal, but couldn't find out just how. Oh, yes, there'll be more of them around later.

"Well, we told him all about it and gave him copies of our report and he has furnished us with copies of all the arithmetics his firm prints. These are being studied, and examples that teach wrong business principles will be pointed out so they can be changed.

"And that isn't all, either. National Headquarters plans to review practically every arithmetic published for use in high schools and grade schools, and our report will

be broadcast in a pamphlet. This pamphlet will be distributed not only to our own members, but the Retailers' National Council has taken up the work and agreed to coöperate in every way possible, so that the influence of at least nine of the most powerful retail associations will be behind the work we have started."

Removal to Indianapolis.

Referring to the removal of the National Headquarters during the year from Argos to Indianapolis, President Williams said:

"That question of moving was debated a long time, but no one, now that we are settled, will doubt the wisdom of what was done. We have the right kind of accommodations for visitors, we are easy to reach, right in the center of the population of the United States, with the finest of transportation facilities. We can get information more quickly, can get extra help when it is needed. We get our publication in the mails on time every month because we are located in the same town with the printers. And there are other advantages too numerous to mention."

Relation with State Associations.

In discussing the relation of the national organization with the state associations, Mr. Williams said that he had only one regret.

"The only regret I have," he said, "as I review my years in service, is the Texas Association. You know that at Richmond we decided that we couldn't continue our relations with that organization. I hated mighty bad to write the letter taking that action. It was the first break in our association family. But there just didn't seem to be anything else to do and the board instructed me to do it.

"But I hoped and prayed that in some way the Texas association would be brought back into the national during my administration. That would have been the bright spot to me. They are such fine fellows, those Texas hardware men, but they had a secretary over there that we just couldn't work with.

"They've changed things now and have a new man as their secretary

and I believe that means progress toward bringing them back. I just don't see how they can afford to stay out, and I know our organization wants them back whenever they are willing to come on the right basis. I hope that will come before I leave the national board. I want to see it happen."

Speaking about the work of simplification, Mr. Williams said that the association has "failed in only one effort and that is with the paint people." He added, however, "that 3,000 retailers are working on a paint simplification program and that the association is going to make the end of the row or bust a hame string."

"Margin" or "Profit."

"We have made great progress," Mr. Williams said, "in the campaign to stop manufacturers and others from saying 'profit' when they mean 'margin.' Advertisers misusing that word profit have been hurting retailers for years. If consumers

knew all about overhead it wouldn't be so bad. But they don't. They forget about anything except the difference between the cost and the selling price, and when they see where the retailers make 50 per cent profit they think it's all wrong, and it would be, if we made it.

"A lot of manufacturers and wholesalers have changed their advertising matter and the Associated Advertising Clubs of the World has gotten behind our campaign, and has issued a bulletin to its members giving the definitions for 'margin' and 'profit' that we recommend and are urging their use.

"Another thing we have been working on is the practice of sending post cards and other literature exposed in the mails so that it shows the prices dealers pay for merchandise. There is a big file of letters in the national office from manufacturers and wholesalers who have promised to stop using quotations of this kind."

National President Gray Holds That Business Is Normal, But Demands Real Law Enforcement.

Urges Care in Credit, Truthful Advertising, But More Than Anything Else—Intelligent Planning.

THE following is a statement made by George M. Gray, President of the National Retail Hardware Association, during its recent convention in San Francisco:

Fundamentally, business is normal, and, in my opinion, what little uncertainty exists, is due more to the unethical and unbusiness-like practices in Washington than to any other single cause.

The American people are demanding a comprehensive program of remedial legislation, rather than defensive legislation. This is a time of constructive legislation, not retaliation. We need fewer laws and more enforcement; less talk and more action.

So far as the retail merchant is concerned, this is a time for careful, thoughtful buying; the kind of buy-

ing which will guard against overstocks and yet insure having the merchandise when called for by the customer.

Past due accounts should not remain on the books, but should be collected. Shelf warmers should be disposed of and no more of them purchased.

Plan of Credit Needed.

A careful plan of credit should be worked out, providing for extension of time on payment of bills to people of good character who are worthy of credit, but not to those who are undeserving. The correct use of credit may be advantageous, but the incorrect use of it is detrimental.

Credit is often detrimental to young men and women just starting out in life. They find it easy to obtain credit because of competition

and rivalry among merchants, but soon through lack of business ability they are swamped with debts they cannot meet.

A merchant by encouraging credit contributes in part to a downfall of character of many of his customers, whose intentions were "honorable" at the time they contracted the debt. He still further contributes to character downfall when he fails to in-



George M. Gray.

sist on frequent, regular payments until the bill is settled in full.

This is a time when overhead should not be increased, but if possible reduced. It means less riding in automobiles, more walking and more real hard work. If aggressive steps are taken, and we put more of ourselves into our business, we will get more out of it. We have been paying too much attention to mere selling and not enough to careful, intelligent planning.

Real success for the business man will come only through truthful advertising. Newspaper advertising and the automobile have, to some extent, combined to bring the city stores to the very door of the farmhouse and suburban home. Mail order houses provided the rural and suburban buyer with a store (even though it is only on paper), from which to plan his purchasing. Newspaper advertising is now offering the service formerly offered only by the catalogs of the mail order houses, and it goes them one better by fur-

nishing this service daily or weekly, instead of yearly or semi-yearly. The newspaper is rendering a valuable regular service in assisting the public to determine its purchases from all merchants rather than from a single one.

Keep Stocks and Collections in Hand.

I believe that a gradual decrease in prices is sure to come, and that if merchants generally do not keep their stocks and collections well in hand, their credit will be affected correspondingly, and many will be forced to retire from business.

However, I am an optimist. I

believe in our Government, in our craft, in our homes and in our children. Men will volunteer in the heat of conflict and under the urge of national peace, but few will accept in times of peace the tedium of barrack life and the harsh discipline of the drill sergeant. The conflict is on, and if the retailer will volunteer in real service before the heat of that conflict comes the close of 1924 will show a reasonable margin on business.

My faith in the hardware merchant is such that I face the future confident and unafraid.

with Hamp Williams' political campaign and the hope expressed that he will be elected as governor of Arkansas.

Martin Engelhart, One of Chicago's Best Known Hardware Men, Passed Away Monday, July 7.

If there is a hardware merchant in Illinois who has not heard of or known personally Martin Engelhart, for years sergeant-at-arms of the Illinois Retail Hardware Conventions, we cannot imagine where he is.

And every one of the more than fourteen hundred hardware merchants in Illinois—and many in other states—will grieve at learning of his death on Monday, July 7th, for Mr. Engelhart was a man of unusually developed friendliness and good fellowship. His hearty greetings at meetings of hardware men helped to make the stranger welcome and were just as much appreciated by those who had known him for years.

Martin, as he was called by almost everybody who had more than just an ordinary acquaintance with him, had been in the sheet metal contracting and retail hardware business for many years at 2538 Lincoln Avenue, Chicago, and had built it up to a very substantial success.

He was a member of the Masonic fraternity, Lake View Lodge No. 774, Lincoln Park Chapter No. 177 Royal Arch, Chicago Commandery No. 19 and Medinah Temple of the Mystic Shrine. The funeral was held under the auspices of the Lake View lodge in the chapel at 2701 North Clark Street, on Thursday afternoon, July 10th.

His associates in the Chicago Retail Hardware Association honored him with a very large attendance.

Mr. Engelhart never married, but he leaves three brothers and two sisters, George F., Charles F. and August and Mrs. John M. Herbst; all of Buffalo, New York, and Mrs. Aram G. Pfahl, Forks, New York.

Send us copies of your advertisements.

Hardware Merchants Pass Resolutions That Cover Many Important Factors of Their Business.

Oppose Use of Post Cards in Announcing Price Changes and Urge Teaching Correct Business Practice in Schools.

THE fifteen resolutions adopted by the National Retail Hardware Association at its recent convention in San Francisco, cover a number of important business problems affecting the retail trade. The gist of the resolutions adopted is as follows:

1—Retailers were urged to take a more active part in local, state and national politics.

2—Free price service by wholesalers was condemned as uneconomic, and the belief expressed that cost of such a service should be borne by the users.

3—Protest was made against the exposure in the mail of prices and quotations on postal cards from manufacturers and wholesalers to retailers.

4—Appreciation was expressed to manufacturers and wholesalers who now use the decimal price system and the hope was voiced that it be extended.

5—The belief was expressed that conferences should be held by manufacturers, wholesalers and retailers.

6—The association pledged itself to continue to uphold its code of ethics and to attempt to introduce more efficient methods in retailing

so as to lower the cost of distribution.

7—Special attention should be given stock turn and buying.

8—Support was extended to the Retailers' National Council.

9—Manufacturers and wholesalers were urged to eliminate the misuse of the words margin and profit in their advertising.

10—Educators and publishers were urged to correct arithmetic text books in use in the public schools so that school children will be taught correct and sound business practice.

11—The principles of simplification and the work of the Department of Commerce in this connection were reindorsed, and paint manufacturers were urged to adopt a simplification program acceptable to the retailers.

12—Wholesale firms selling direct to the consumer were denounced as unethical and uneconomical.

13—The suggestion was made that manufacturers using old lists change them so that standard discounts will apply in the trade.

14—Appreciation to the California dealers for their hospitality.

15—Sympathy was expressed

Continental Screen Company Is New Name of Well Known Manufacturing Concern.

The name of the screen door and window screen manufacturing concern, known for many years as the Continental Company, has been changed to the Continental Screen Company.

How to Make the Small Account Pay Its Share of Overhead.

The clearing house committee of the Boston Clearing House Association have made the following rule obligatory on their members in Greater Boston, beginning June 1, 1924:

"Every deposit account subjected to check and payable upon demand, excepting savings deposits and deposit accounts of the Government of the United States, Commonwealth of Massachusetts, or the City of Boston, the average monthly collected balance of which is less than \$300 in any month, shall be charged not less than \$1 as compensation for services rendered by the member bank in handling the account during such month."

Previously the banks have been soliciting small accounts.

The bank further writes its depositors as follows: "We do not believe it fair to our customers as a whole to continue to handle some of our accounts at an actual loss, which must either be borne eventually by other accounts or result in decreased efficiency and service to our customers as a whole."

Are the banks leaders in a movement to cut out business which does not pay a profit? Should the hardware merchant follow with the lines he sells which do not cover his overhead, such as lead and oil, farming implements, the products of the tin shop. Does the latest overhead of 24.87 per cent mean increased expense, which means a serious study of selecting only profit-bearing merchandise? When the overhead averages 24.87 per cent it means that many must have a larger overhead

to bring the average down to that figure.

Are we honest to ourselves in selling goods less than cost? The United States Government, the states and cities do not deposit money with the hardware firms to do business.

It takes courage to live—courage and strength and hope and humor. And courage and strength and hope and humor have to be bought and paid for with pain and work and prayers and tears.—*Anon.*

Retail Hardware Doings

California.

A new store, the Dresslar Hardware Company, soon will be opened for business at Los Angeles, on West Washington Street, near Burlington.

Illinois.

Harry Storm of Chrisman has traded his hardware stock on the south side of the square to W. C. Alverson of Danville for his residence and a five-acre tract of ground.

Kansas.

Lamborn Brothers, Yates Center, have sold their hardware stock to Ed Light and Charles Opperman. The new firm is to be known as the Light and Opperman Hardware Company.

Kentucky.

Lothair Hardware Company, Lothair, has been incorporated with a capital of \$10,000. Incorporators are: J. L. Baker, A. M. Baker and J. M. Baker.

Michigan.

The Lee Hardware Company of Farmington has moved into its new store on Grand River Avenue.

Missouri.

R. M. Braden has purchased the Marr Hardware store at 4722 Troost Avenue, Kansas City.

E. D. Nixon has opened the Variety and Hardware store at 1807 East Thirty-first Street, Kansas City.

Richards and Sons have moved their stock of hardware from the Potts Building, on the east side of the square, Mexico, to the building recently purchased by them from W. J. Sannebeck and Company.

Nebraska.

The Welsh and Moore Hardware Company, Fairbury, will move into the building on the east side of the square August 1st.

Edward H. Thomsen of Red Oak, Iowa, has purchased the Brandenburg Hardware store, which is located in the Degner Building, Norfolk.

North Dakota.

Fred Watschke and Sons of Langdon have closed a deal whereby they become the owners of the stock of the Loma Hardware Company, which has been in the hands of the Marshall-Wells Company of Duluth for the past two years.

Ohio.

The Fremont Hardware Company has leased the rooms on the lower floor of the Kinney Building on Crogham Street, Fremont, for its new location.

The last of the Loomis interests in the L. W. Loomis Hardware Company at Front and Portage Streets, Akron, have been sold to John L. Bagley of Niles and W. F. Miller of Warren.

Oklahoma.

The Blanchard Hardware Company has opened for business in their own new building on East Main Street, Haskell.

South Dakota.

George Klinger has added hardware articles to his harness stock at Marion. On account of the town not having a hardware store, he is selling them without trouble.

Rood and Spargur have purchased the hardware stock of E. S. Uhrig at Pierre.

Washington.

The Keeney Hardware Company, established by Orval Keeney, has opened for business at 710 I Street, Hoquiam.

F. T. Larrabee, Edwall, whose hardware store and stock was burned a week ago, has leased two store rooms of F. T. Hall, adjoining the post office on the south, and is remodeling and fitting them up for his hardware business.

Coming Conventions

Iowa Sheet Metal Contractors' Outing, July 12 and 13, 1924, at Waterloo, William Thomson, P. O. Box 513, Mason City, Iowa.

Michigan Sheet Metal and Roofing Contractors' Outing to Quebec, July 19 to 26, 1924. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Ohio Sheet Metal Contractors' Association, Southern Hotel, Columbus, Ohio, July 22 to 24, 1924. George F. Mooney, Secretary, 213 First National Bank Building, Columbus, Ohio.

Sheet Metal Contractors' Association of Pennsylvania, Pittsburgh, Pennsylvania, July 23, 24 and 25, 1924. W. F. Angermeyer, Secretary, 714 Homewood Avenue, Pittsburgh, Pennsylvania.

New York State Retail Hardware Association Convention and Exposition, Buffalo, February 10, 11, 12, 13, 1925. Headquarters, Hotel Statler. Exposition at the Broadway Auditorium. John B. Foley, Secretary, City Bank Building, Syracuse.

North Dakota Retail Hardware Association Convention (place not yet selected), February 11, 12, 13, 1925. C. N. Barnes, Secretary, Grand Forks.

Pennsylvania & Atlantic Seaboard Hardware Association Convention and Exhibition, February 16 to 20, 1925, at Philadelphia Commercial Museum. Sharon E. Jones, Secretary, 604 Wesley Building, Philadelphia.

Minnesota Retail Hardware Association Convention, St. Paul Auditorium, St. Paul, February 17, 18, 19, 20, 1925. C. H. Casey, Secretary, Nicollet Avenue and Twenty-fourth Street, Minneapolis.

Southeastern Retail Hardware Association Convention and Exhibition, Birmingham, Ala., May, 1925. Walter Harlan, Secretary-Treasurer, 701 Grand Theater Building, Atlanta, Georgia.

Schaus Makes His Money on the Ranges He Sells, Not on Those Stocked.

It Is Only by Keeping His Capital Constantly at Work That the Stove Merchant Can Make a Fair Profit.

AN ADVERTISEMENT to perform its work properly must call attention to the service which the advertised article renders.

It is not sufficient to show the article in completed form. It must be advertised in such a manner as to quicken the imagination of the prospective purchaser.

In selling stoves the present practice is to show the products—the good eats—made possible with the stove.

Its beauty and appearance are factors which will have weight in de-

termining what homes the stoves will or will not enter. The skillful advertisement writer utilizes all these factors in presenting his product. He shows illustrations, in the case of a stove, of the beautifully browned biscuits or a well-done roast.

The materials from which the range is made, if properly explained, are also factors, but they are of a secondary consideration in so far as selling a stove to a woman is concerned.

After all, you make your money,

not on the goods you stock, but on the goods you sell. The more frequent your turnover, the bigger and better your profits. And while in some lines that you carry over from one year to another you may run no particular risk of actual loss, you are losing the profits on the sales you might make and the interest on the money you have tied up. The shrewd stove dealer aims to keep his capital constantly at work, and to turn over his investment as frequently as possible.

This he can only do by getting the best possible arrangement for his advertisements so as to give them a chance to bring customers into the store.

The accompanying advertisement is a good start in the right direction. It was taken from the Newark, Ohio, *Advocate*.

Advertising Helps One Man to Corner Stove Trade in His Town.

One small city dealer in the stove selling business was so convinced that "advertising pays" that the publicity department of the stove firm could hardly keep him supplied with literature.

He sent out a few hundred circulars, and asked for more. The firm supplied enameled signs to be placed at points of vantage throughout the district.

He kept asking for more until they questioned his judgment; and then he bought some at his own expense.

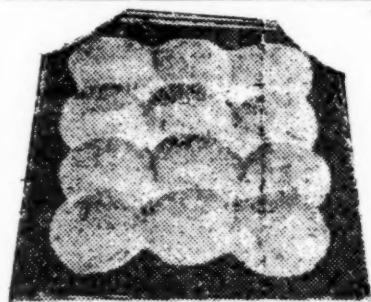
Not content with the advertising placed in the local paper by the manufacturers, he supplemented it with advertising of his own.

The upshot was that he pretty well cornered the stove trade of his town and district.

Dealers in stoves and heating goods should keep a close watch on prospects. One dealer heard of an individual who contemplated buying from a mail order house. He gave that man a personal call, talked quality to him, hinted at the trouble he would have in putting the stove up, played on his sense of loyalty to

SCHAUS' SPECIALS

For MONDAY ONLY



Better Biscuit Bakers

Regularly priced at 75c.
Special—
Monday only.....**49c**



The "Champion" Gas Range

Has white enameled splashers, door panels, dirt trays and broiler pans; nicked door frames, hinges and trimmings.

The whole range is well balanced and makes a wonderful appearance in the kitchen.

When you buy your range—Buy a Copper-Clad

The Schaus Co.

36 South Third Street.

Copper-Clad Range "Special" Advertisement Showing Nicely Browned Biscuits Produced by Biscuit Baker on Sale.

home industries, and ended by selling him a better grade of stove. Another dealer heard of a man who had bought a mail order stove and been disappointed in it. He saw the man at once, and found that the stove was defective. It was returned and the dealer sold a stove of his own to replace it.

***Boston Hardware Stresses
Protection of Customer
By Double Guarantee.***

In order to sell stoves the salesman must of necessity know all of the working parts of the article he

is selling. It does not do for him to stand beside the customer and say, "Now, here is a very good stove for such and such a price." The customer wants to know why it is a good stove, and it's up to the salesman to tell him.

The advertisement must first be so constructed as to bring the customers to the store. After that it is up to the salesman.

The advertisement must of necessity be brief and small; therefore, the wording going into it should be well selected and designed carefully, eliminating extraneous matters.

Don't crowd the advertisement with too many articles, rather concentrate on one or two and change the advertisement oftener.

A good salesman will be able to suggest other needs to the customer once he is in the store much more adroitly and with greater effect than could be done in any advertisement.

The accompanying advertisement was taken from the *Hazleton*, Pennsylvania, *Plainspeaker*.

***Do You Know the Real Art
of Successful Telephoning?***

"Hash in the voice" — that's what's the matter with many of us. Most of us don't know how to speak distinctly, and we have the bad habit of running words together in a jumble of meaningless sound.

Faults of speech show up quickly over the telephone. The trouble "Central" has in understanding a number like, "Main Four-Three-Two-One," for instance, ought to be a warning. But we are prone to blame it on "Central" and to think that unseen person either stupid or contrary, while as a matter of fact we are the ones at fault.

There is such a thing as a "perfect telephone voice." The possessor of such a voice knows just the right pitch to use, the correct volume called for, and he enunciates clearly.

Speaking too loud over the 'phone is as serious a fault as not speaking loud enough. Some people scream whenever they get their lips near a mouthpiece. Others swallow their

words and all but whisper. Many of us are too intense when we use the 'phone. We often talk too fast. We get nervous fidgets when the bell rings. We think more of the fact that we are talking over the telephone than what it is that we have to say—and it's always a mistake to be too conscious of the medium of expression, in arts and letters or in everyday affairs.

There is a man in your town who uses the telephone a great deal, much of the time for long distance calls. He has acquired the "perfect telephone voice." His tone is level and clear, about the same as when he speaks face to face. He gets results, too. He never seems to have to repeat, nor to spell it out. His words don't tread on each other's heels. He simply talks over the telephone with the same volume and quality of voice as he uses in general conversation. This example is worth following. Oh, yes—and speak directly into the transmitter.

A pleasant voice of the telephone begets business.

***See That the Illustrations
of Your Ads Are Clear.***

Particular care should be exercised when constructing an advertisement to see that the illustrations are clear and distinct. This appears to be a simple admonition, but it is, nevertheless, true, that many advertisements are appearing with illustrations from which the owner himself would not buy the goods.

If the job is to be done at all, it certainly is worth doing well. No effort should be spared to get illustrations that show the product off to its best advantage.

The next thing to consider is the best arrangement. Make the ad balance. Draw an imaginary line through the center of the ad, both vertically and horizontally; then see that the four corners balance one another.

Remember, that in the successful arrangement and clearness of illustration lies the success of the mail order house catalog.

Headquarters
For
STOVES
GAS
COMBINATIONS

Bear in mind—

you buy a stove to last a lifetime. So buy a good one. A stove that is doubly guaranteed—by the manufacturer and also

**The BOSTON
HARDWARE &
WALL PAPER
STORE**

31 West Broad St.,

West Hazleton.

Bell 561-R. Cons. 2212

Where You Buy Cut-out

Border at 5c a yard.

Featuring Economy in Buying Goods
of Quality.

Confidence Is Built Upon Truth and Fair Play, Be It in Advertising or Direct Salesmanship.

*Remember When Writing Your Advertisements
That You Are Moulding Public Opinion.*

"Advertising, in my opinion," said Bill Haven, looking at the advertisement of Tolhuizen & Mersen, in the paper which lay open before

age reader. In order to do this, they have compiled a novel morality poem suggesting an experience which every one has known.

are poetically inclined, but it cannot be said to be the best type of advertisement for the purpose it is destined to serve.

The appeal for permission to demonstrate the vacuum cleaner is well taken.

* * *

The accompanying advertisement, in its original form, 2½x4 inches, was taken from the *Galesburg, Illinois, Register*.

The advertisement is well arranged, neat and attractive.

A judicious use of white space has been made. The type stands out boldly before you as if beckoning your eyes or pleading for attention.

In order to conform to recognized scientific practice, however, we would have placed the signature at the bottom, together with the address where it logically belongs.

Then in its stead an attention getting headline could have been used. This would make the reader jump right into the offering and come down to the signature.

The way it is now, he goes from the name of the store to the article offered, thence to the address.

This is not recognized as the best of practice in advertisement arrangement.

TRIM YOUR HOME WITH CORBIN HARDWARE AND BE SATISFIED

SEE THE MARSHALL FURNACE CO.
REPRESENTATIVE AT OUR STORE.

Tolhuizen & Mersen

Telephone 3057

206 North Burdick St.

him as he sat in the back office of the store, "is the sales representative of the store. The facility for making sales is the life blood of the enterprise, and, therefore, it behooves those who direct the policy of the store to see to it that the best possible material is put into the store advertisements.

"I don't see why it is that some of these men can't understand why their ads are not drawing. If they use a poor grade of gasoline in their cars, they don't expect A-1 service. But when they pay A-1 prices for advertising space they owe it to their business to see that they get the best possible copy that their money will buy.

"We retail merchants have got to learn how to write better advertising copy. We have got to learn how to put our personalities into the copy which we send out as our store representatives. And to be frank with you Tolhuizen and your partner, Mersen, your ads could stand some improvement, too."

* * *

The *Muskegon, Michigan, Chronicle*, carried a rather peculiar advertisement recently. The Freye Hardware Company has here made an attempt at attracting attention by appealing to the curiosity of the aver-

The thought is made somewhat obscure in the poem so as to make

Where Quality Is Higher Than Price--

AN EXPERIENCE

Did you ever have a piece o' bread
All nicely buttered o'er,
And jes' as yo' was gwine take a bite,
It fell, butter side down, on the floor?

Get the Idea?

Buy your Hardware needs from us and eliminate mishaps.

May we demonstrate a Vacuum Cleaner in your own home?

Ball Bearing Roller Skates, \$1.29 and up.

Freye Hardware Co.

TWO STORES:

224 LAKE SHORE DRIVE
PHONE 3287

26 HEIDLER ST.
PHONE 2362

the reader peruse the entire ad to find out what it's all about.

It may be all right for those who

At Churchill Hdw. Co.

SATURDAY ONLY Willow Clothes Baskets

Small	69c
Medium	79c
Large	98c
Extra Large	\$1.49

246 E. MAIN

PHONE MAIN 4665

In Spite of Typical Mid-Summer Dullness There Are Many Signs of Improvement.

Prices Generally Speaking Are Showing Signs of Tightening and Buying Is on Upgrade.

GRADUAL improvement in industry and the belief that better business is not far off are indicated in daily reports of mills and factories expanding operations after varying periods of curtailment or suspension. While conservative purchasing still is the rule, the increase in farm purchasing power as the result of higher grain prices is expected to bring broader buying this autumn.

A mild improvement in the steel market is continuing but it has yet to reach the point where it is having any appreciable influence upon total tonnage. The industry reflects various manifestations of a reviving interest which gives promise of being converted into business if it is maintained and the atmosphere is decidedly more cheerful than a few weeks ago. Some steel interests declare the general movement of the market is the best in 60 days.

Operations are holding substantially on an even keel with some mills still to resume after the holiday suspension. No great significance is attached to a strike of a number of coke workers in the Connellsville region against a reduction of wages by an independent operator.

More than 20,000 operatives in the Connecticut Valley have resumed work in textile and other manufacturing plants after shutdowns carrying from two to six weeks.

Tin Plate Will Expand Operations.

In the steel industry the American Sheet and Tin Plate Company has expanded operations. Operating schedules of the mills in the Youngstown Valley have improved. This improvement in production reflects the accumulation of orders during the recent buying lull and also actual betterment in new business received.

Taken together, such incidents as these are the basis for the growing belief that the general business foundation is healthy and the trend has turned definitely for the better.

The improved situation of the railroads is being much emphasized. The western roads, which were most seriously affected by the depression, this year are making a creditable showing despite some decline in traffic. For example, for the first five months of this year Northern Pacific showed an increase of 39 per cent in net income over a year ago, Great Northern had an increase of 5 per cent, and Chicago and North Western a gain of 10 per cent.

It is reported from Pittsburgh that subsidiaries of the United States Steel Corporation are quoting shapes, plates and bars at 2.15 cents base Pittsburgh, which is from \$1 to \$2 a ton lower than formerly.

Copper.

Business in copper was without improvement and a weak tone prevailed in sympathy with a further decline in the European market. With an absence of business, however, prices were largely nominal. Producers generally were still asking 12.37½ cents delivered for Electrolytic for July, August and September shipment.

There were rumors of offerings in the Connecticut Valley at 12.25 cents delivered, but whether by first or second hands was not stated. Domestic consumption, while lower, is better maintained than might be expected under present unsatisfactory conditions.

It was difficult to either buy or sell Electrolytic in second hands at 12.25 cents f. o. b. refinery, but in the absence of business this was a nominal quotation for either prompt or July shipment. Holders were

asking nominally 12.30 cents f. o. b. refinery for August, 12.35 cents for third quarter and 12.50 cents for fourth quarter shipment f. o. b. refinery.

Zinc.

The market continued dull with only occasional carloads inquired for, but still showed stubborn resistance against decline.

This resistance is partly due to support by operators, who are again bidding 5.77½ cents East St. Louis for Prime Western either prompt or future shipment. But these bids are so close to the asking price of 5.80 cents that the situation must be credited with some independent firmness apart from such support. No anxiety to sell is manifested by producers and the offerings at 5.80 cents are not general.

Chicago warehouse prices on sheet zinc are \$11.50 per 100 pounds in cask lots and \$11.50 per 100 pounds in less than cask lots.

Lead.

The movement in manufactured products is slack though not exceptionally so for the season and, in fact, some manufacturers report that the condition is slightly favorable in comparison with a year ago.

The outlook is uncertain, but general opinion does not anticipate so strong a revival of fall activity as was seen in 1923.

The hand to mouth character of buying at present would seem to warrant a natural increase of stocks to meet the demand when consumers' needs mature, and there is at present but little selling pressure.

Chicago warehouse prices are as follows: American pig lead, \$8.75 per 100 pounds; bar lead, \$9.75 per 100 pounds.

Tin.

The primary tin market continued motionless as regards orders on

inquiries from consumers reaching the New York market.

On the New York Metal Exchange Call all deliveries July to October inclusive were offered at 44.00 cents and July-August shipment from East Indies at 43.95 cents without finding buyers.

The future of the market would seem to depend on how long the traders in London are prepared to hold or advance prices there in the face of virtually no new American consuming demand, and how long they are prepared to wait for such buying to develop.

Chicago warehouse prices are as follows: Pig tin, \$48.50, and bar tin, \$50.50 per 100 pounds.

Solder.

Chicago warehouse prices on solder are as follows: Warranted, 50-50, \$28.25; Commercial, 45-55, \$27.50, and Plumbers', \$26.50, all per 100 pounds.

Wire and Nails.

Despite the week end holiday one maker of bolts and nuts experienced a slight increase in business. Demand as a whole remains quiescent and will not improve until the July inventory season has passed.

Some spot business in large machine bolts is going at 70 off, although one maker has made 60 and 20 off his minimum. Whatever contracting there is appears to be on the latter basis.

Bolts and Nuts.

Jobbers' demand for wire and wire products has picked up a trifle, but demand for manufacturers' lines is no better. Business is sufficient to keep wire plant operations at about 35 per cent of capacity.

Competition for attractive business has developed an occasional price of 2.85 cents, Pittsburgh, for wire nails, but 2.90 cents is the general quotation on small business.

Sheets.

Makers of steel sheets continue greatly in need of business, but the expectation of improvement is holding prices at the level of 4.80 cents, Pittsburgh, for galvanized, 3.65

cents for black and 2.80 cents for blue annealed.

Cool weather, which would be welcomed in other years, is proving baneful in view of the lack of orders.

Tin Plate.

New orders for tin plate are scarce, and this week operations probably will slip from the average of last week, 55 to 58 per cent of capacity, to about 50 per cent. Many of the tin mills did not resume operations Monday morning as expected and were kept idle for a day or two longer than anticipated.

No demand is current for stock plate, but the price remains unchanged at \$5.15 per base box.

Production plate is firm at \$5.50, although a buyer of an extra large tonnage would perhaps be successful in developing a lower figure.

Old Metals.

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$16.75 to \$17.25; old iron axles, \$23.50 to \$24.00; steel springs, \$18.00 to \$18.50; No. 1 wrought iron, \$12.50 to \$13.00; No. 1 cast, \$15.50 to \$16.00, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 8 cents; light brass, 5 cents; lead, 5 cents; zinc, 3¼ cents, and cast aluminum, 14½ cents.

Pig Iron Markets Are Not Very Lively But Price Indications Are Favorable.

Slightly Higher Quotations by Sellers Are Accepted in Several Instances.

PIG IRON is resisting further price declines with new business of somewhat smaller volume after the recent active buying movement. A seller here and there is beginning to try out slightly higher prices. Of interest is the application for an import pig iron rate from Mobile to Birmingham coupled with the report that pipe companies in that territory may bring in foreign iron.

The scrap market has undergone apparent strengthening in all districts with numerous advances of 50 cents to \$1 per ton reported.

Northern malleable and foundry iron prices are displaying more firmness in the Chicago market. Iron for third quarters still is available at \$19.50 furnace, but furnaces evidently are trying to make \$20 the bottom.

Carlots are commanding \$20, and one seller is refusing business under \$20 for the last quarter.

With the foundry melt not increasing appreciably, it is becoming apparent that a considerable part of the heavy buying recently was speculative. The spot market has greatly improved, and foundries now are

taking in small tonnages where months ago they refused iron at any price.

Stocks at furnaces are large. A range of \$19.50 to \$20 still represents the market. Michigan melter is inquiring for 1,000 tons of malleable and another Michigan user wants 600 tons of foundry iron. Sales and inquiry still are good but decidedly under the peak of the recent buying movement. Charcoal iron is unchanged at \$26, furnace. It is understood no reduction in the price of charcoal now is contemplated.

Sales of southern iron are light. The Birmingham minimum is \$18.

A slight improvement in the tin plate market is apparent in the Youngstown section. The leading maker there has 65 per cent of capacity engaged and sufficient business is in hand to support this rate for the next three weeks. Makers of tin cans supplying the canning trade are displaying more interest. Orders are being placed more frequently with immediate delivery requested. Prices on production plate are firm at \$5.50 per base box Pittsburgh.

Chicago Warehouse Prices on Hardware and Metals.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry. 19 50 to 20 00	
Southern Fdy. No.	
2	25 01 to 26 01
2	24 01 to 25 01
coal	29 04
Malleable	19 50 to 20 00

FIRST QUALITY BRIGHT TIN PLATES.

IC	20x28 112 sheets	25 80
IX	20x28	27 25
IXX	20x28 56 sheets	15 35
IXXX	20x28	16 45
IXXXX	20x28	17 55

TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$25 60
IX 20x28, 40-lb. "	25 50
IX 20x28, 80-lb. "	21 80
IX 20x28, 80-lb. "	24 70
IX 20x28, 25-lb. "	20 80
IX 20x28, 25-lb. "	23 70
IC 20x28, 30-lb. "	18 30
IV 20x28, 30-lb. "	21 15
IC 20x28, 15-lb. "	17 05
IC 20x28, 12-lb. "	15 75
IC 20x28, 8-lb. "	14 05

COKE PLATES.

Cokes, 80 lbs., base, 20x28.	\$12 70
Cokes, 90 lbs., base, 20x28.	12 95
Cokes, 100 lbs., base, 20x28.	13 25
Cokes, 107 lbs., base, IC	
20x28	13 60
Cokes, 135 lbs., base, IX	
20x28	15 40
Cokes, 155 lbs., base, 56	
sheets	8 80
Cokes, 175 lbs., base, 56	
sheets	9 70
Cokes, 195 lbs., base, 56	
sheets	10 65

BLUE ANNEALED SHEETS.

Base 10 ga.per 100 lbs.	3 90
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ONE PASS COLD ROLLED BLACK.

No. 15-20.....per 100 lbs.	\$4 50
No. 22-24.....per 100 lbs.	4 55
No. 26.....per 100 lbs.	4 60
No. 27.....per 100 lbs.	4 65
No. 28.....per 100 lbs.	4 70
No. 29.....per 100 lbs.	4 75

GALVANIZED.

No. 16.....per 100 lbs.	\$4 85
No. 18-20.....per 100 lbs.	5 00
No. 22-24.....per 100 lbs.	5 15
No. 26.....per 100 lbs.	5 30
No. 27.....per 100 lbs.	5 45
No. 28.....per 100 lbs.	5 60
No. 30.....per 100 lbs.	6 10

BAR SOLDER.

Warranted.	
50-50.....per 100 lbs.	28 25
Commercial.	
45-55.....per 100 lbs.	27 50
Plumbers.....per 100 lbs.	26 50

ZINC.

In Slabs.....	6 85
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SHEET ZINC.

Cask lots, stock, 100 lbs....	11 50
Less than cask lots, 100 lbs.	11 75

BRASS.

Sheets, Chicago base.....	17 1/2 c
Mill Base.....	16 1/2 c
Tubing, brazed, base.....	24 1/2 c
Wire, base.....	16 1/2 c

COPPER.

Sheets, Chicago base.....	19 1/2 c
Mill base.....	18 1/2 c
Tubing, seamless, base.....	21 1/2 c
Wire, No. 9 & 10 B. & S. Ga.	
Wire, No. 11, B. & S. Ga.	16 1/2 c

LEAD.

American Pig.....	8 75
Bar.....	9 75

Sheet.	
Full Coils.....per 100 lbs.	10 75
Cut Coils.....per 100 lbs.	11 00

TIN.

Pig Tin.....per 100 lbs.	48 50
Bar Tin.....per 100 lbs.	50 50

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ADZES.

Coopers'.	
Barton's.....Net	
White's.....Net	

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder 18%	
Loaded with Smokeless Powder.....18%	
Winchester.	
Smokeless Repeater	
Grade.....20 & 4%	
Smokeless Leader	
Grade.....20 & 4%	
Black Powder.....20 & 4%	
U. M. C.	
Nitro Club.....20 & 4%	
Arrow.....20 & 4%	
New Club.....20 & 4%	
Gun Wads—per 1000.	
Winchester 7-8 gauge 10&7 1/4 %	
" 9-10 gauge 10&7 1/4 %	
" 11-28 gauge 10&7 1/4 %	

ASBESTOS.

Paper up to 1/16.....6c per lb.	
Rollboard.....6 1/2 c per lb.	
Millboard 3/32 to 1/2.....6c per lb.	
Corrugated Paper (350 sq. ft. to roll).....\$6.00 per roll	

AUGERS.

Boring Machine.....40&10%	
Carpenter's Nut.....50%	
Hollow.	
Stearns, No. 4, doz.....\$11 50	
Post Hole.	
Iwan's Post Hole and Well 35%	
Vaughan's, 4 to 9 in.....\$15 60	

AXES.

First Quality, Single	
Bitted (unhanded), 3 to 4 lb., per doz.....\$14 00	
Good Quality, Single	
Bitted, same weight, per doz.....13 00	

BARS, CROW.

Steel, 4 ft., 10 lb.....\$ 30	
Steel, 5 ft., 18 lb.....1 40	
Pinch Bars.	
5 1/2 ft., 24 lb.....1 60	

BARS, WRECKING.

V. & B. No. 12.....\$0 30	
V. & B. No. 24.....0 42	
V. & B. No. 324.....0 57	
V. & B. No. 30.....0 48	
V. & B. No. 330.....0 63	

BITS.

All Vaughan and Bushnell.	
Screw Driver, No. 30, each \$ 30	
Screw Driver, No. 1, each 18	
Reamer, No. 80, each.....45	
Reamer, No. 100, each.....23	
Countersink, No. 13, each.....30	
Countersink, Nos. 14-15, each 30	

BLADES, SAW.

Wood.	
Atkins 20-in.	
Nos. 6 40 26	
	\$8 90 \$9 45 \$5 40

BLOCKS.

Wooden.....45%	
Patent.....45%	

BLOW TORCHES (See Firepots).

BOARDS.

Stove.	Per Doz.
Crystal, 33".....	\$23 90
Wash.	
No. 760, Banner Globe (single).....per doz.	\$5 25
No. 652, Banner Globe (single).....per doz.	6 75
No. 801, Brass King.....per doz.	8 25
No. 860, Single—Plain Pump.....	6 25

BOLTS.

Carriage.	
Small, roll thread.....50-10-5%	
Small and Large cut thread.....50-5%	
Machine.	
Small, roll thread.....60-5%	
Small, cut thread.....50-10-5%	
Stove.....70-5%	

BRACES, RATCHET.

V. & B. No. 444, 8 in.....\$4 54	
V. & B. No. 223, 8 in.....3 89	
V. & B. No. 111, 8 in.....3 55	
V. & B. No. 11, 8 in.....3 02	

BRUSHES.

Hot Air Pipe Cleaning.	
Bristle, with handle, each \$0 85	
Flue Cleaning.	
Steel Only, each.....\$1 25	

BURRS.

Copper Burrs only.....40-10%	
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BUTTS.

Steel, antique copper or dull brass finish—case lots—	
3 1/2 x 3 1/2—per dozen pairs \$3 66	
4 x 4.....4 92	
Heavy Bevel steel inside sets, case lots—	
.....per dozen sets 7 80	
Steel bit keyed front door sets, each.....1 90	
Wrought brass bit keyed front door sets, each.....3 25	
Cylinder front door sets, each.....7 50	

CEMENT, FURNACE.

American Seal, 5 lb. cans, net \$ 45	
" 50-lb. cans, " 90	
" 25 lb. cans, " 2 00	
Asbestos, 5 lb. cans, net.... 45	
Pecora.....per 100 lbs. 7 51	

CHAINS.

% in. proof coil chain, per 100 lbs.....\$3 50	
American coil chain....40 & 10%	

CHIMNEY TOPS.

Iwan's Complete Rev. & Vent.....30%	
Iwan's Iron Mountain only.....35%	
Standard.....30 to 40%	

CHISELS.

Cold.	
V. & B. No. 25, 1/4 in., ea. \$0 26	
V. & B. No. 25, 1/2 in., ea. 38	
Diamond Point.	
V. & B. No. 55, 1/4 in.....0 33	
V. & B. No. 55, 1/2 in.....0 45	

Firmer Bevelled.

Round Nose.	
V. & B. No. 65, 1/4 in.....0 33	
V. & B. No. 65, 1/2 in.....0 45	

Socket Firmer.

V. & B. No. 50, 1/4 in.....0 31	
V. & B. No. 50, 1/2 in.....0 62	

CHUCKS, DRILL.

Goodell's, for Goodell's Screw Drivers.....List less 35-40%	
Yankee, for Yankee Screw Drivers.....\$6 00	

CLAMPS.

Adjustable.	
No. 100, Door (Stearns) doz.....\$22 00	
Carpenter's.	
Steel Bar..List price plus 20%	

Hose.	
Sherman's brass, 1/4-inch per doz.....\$0 48	
Double, brass, 1/4-inch, per doz.....1 20	

CLINKER TONGS.

Front Rank, each.....\$1 75	
Per doz.....18 00	

CLIPS.

Damper.	
Acme, with tail pieces, per doz.....\$1 25	
Non Rivet tail pieces, per doz.....25	

COPPERS—Soldering.

Pointed Roofing.	
3 lb. and heavier.....per lb. 40c	
2 1/2 lb.45c	
2 lb.48c	
1 1/2 lb.55c	
1 lb.60c	

CORD.

No. 7 Std. per doz. banks..\$10 30	
No. 8 " " " " 11 75	

CORNICE BRAKES.

Chicago Steel Bending.	
Nos. 1 to 6B.....10%	

COUPLING HOSE.

Brass.....per doz. \$2 20	
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CUT-OFFS.

Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd. Standard gauge.....40%	
26 gauge.....10%	

DAMPERS.

"Yankee" Hot Air.	
7 inch, each 20c, doz.....\$1 75	
8 " " 25c, " 2 40	
9 " " 30c, " 2 75	
10 " " 32c, " 3 00	

Smoke Pipe.	
7 inch, each.....\$ 35	
8 " " 40	
9 " " 50	
10 " " 60	
12 " " 90	

Reversible Check.	
8 inch, each.....\$1 50	
9 " " 1 70	

DIGGERS.

Post Hole.	
Iwan's Split Handle (Eureka).....per doz. \$14 00	
4-ft. Handle.....per doz. 35 00	
7-ft. Handle.....per doz. 35 00	
Iwan's Hercules pattern, per doz.....14 90	

DRILLS.

V. & B. Star, 12-inch Length.	
1/4, 5/16 and 3/8, each.....\$ 27	
1/2, each.....28	
1, each.....57	
1 1/2, each.....85	
V. & B. Star, 18-inch Length.	
1/4, each.....\$ 35	
1/2, each.....47	
1, each.....73	
1 1/2, each.....1 10	

EAVES TROUGH.

Milcor	
Galv. Crimped, crated.....75%	

ELBOWS—Conductor Pipe.

Milcor	
Galv., plain or corrugated, round flat.	
Crimp, Std. gauge.....65%	
26 Gauge.....40%	
24 Gauge.....10%	

Square Corrugated.	
Milcor	
Standard gauge.....50%	
26 gauge.....30%	

Fortico Elbows.	
Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested.....70 & 5%	
Nested solid.....70 & 5%	

ELBOWS—Stove Pipe.

1-piece Corrugated. Uniform.	Per Doz.
5-inch.....\$1 40	
6-inch.....1 50	
7-inch.....2 00	
Special Corrugated.	Per Doz.
6-inch.....\$1 35	
7-inch.....1 65	

Uniform, Collar Adjustable.	
5-inch	\$3 00
6-inch	2 10
7-inch	2 60
WOOD FACES—50% off list.	

FENCE.

Field Fence	61 1/2%
Lawn "	53%

FILES AND RASPS.

Heller's (American)	50-10%
American	60-10%
Arcade	50%
Black Diamond	40-10-5%
Eagle	50%
Great Western	50%
Kearney & Foot	50%
McClellan	50%
Nicholson	50%
Simonds	50%

FIRE POTS.

Ashton Mfg. Co.	
Complete line	
Firepots and Torches	52%

Otto Berns Co.	
No. 1 Furn. Gasolene with large shield, 1 gal.	\$ 75
No. 3 Furn. Kerosene, 1 gal.	15 12
No. 10 Brazier, Kerosene or Gasolene, 10 gals.	47 52
No. 5 Torch, Gasolene or Kerosene, 1 pt.	7 92
No. 33 Torch, Gasolene, 1 quart	5 40
No. 86 Torch, Gasolene, 1 pint	4 05

Clayton & Lambert's.	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas	52%
West of above boundary line	48%

Geo. W. Diener Mfg. Co.	
No. 02 Gasolene Torch, 1 qt.	\$ 55
No. 0250, Kerosene or Gasolene Torch, 1 qt.	7 50
No. 10 Tinner's Furn. Square tank, 1 gal.	12 60
No. 15 Tinner's Furn. Round tank, 1 gal.	12 00
No. 21 Gas Soldering Furnace	1 60
No. 110 Automatic Gas Soldering Furnace	10 50

Double Blast Mfg. Co.	
Gasolene, Nos. 25 and 35	60%
Quick Meal Stove Co.	
Vesuvius, P.O.B. St. Louis	30%
(Extra Disc. for large quantities)	

Chas. A. Hones, Inc.	
Buzzer No. 1	\$ 9 00
" " 2	12 00
" " 22	18 50
" " 42	15 00
" " 43	19 90

FREEZERS—ICE CREAM.

Peerless and Alaska	
1 quart	\$2 95
2 quart	3 45
3 quart	4 10
White Mountain	
1 quart	\$4 85
2 quart	5 65

GALVANIZED WARE.

Pails (Competition), 3 qt.	\$1 95
10-qt.	2 20
12-qt.	2 40
14-qt.	2 75
Wash tubs, No. 1	\$8 35
No. 2	7 00
No. 3	8 00

GARAGE DOOR HARDWARE.

Stanley	All net
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GAUGES.

Marking, Mortise, etc.	Nets
Wire.	
Disston's	25%

GIMLETS.

Discount	65% and 10%
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GLASS.

Single Strength, A and B.	
all sizes	83 & 85%
Double Strength, A, all sizes	84%

GREASE, AXLE.

Frazers'	
1-lb. tins, 35 to case, per case	\$ 4 70
3-lb. tins, 34 to case, per case	7 30
5-lb. tins, 12 to case, per case	7 20
10-lb. tins, per dozen	10 40
15-lb. tins, per dozen	13 80
25-lb. tins, per dozen	19 80

HAMMERS, HANDLED

All V. and B.	Each, net
Blacksmiths' Hand, No. 0, 26-oz.	\$0 87
Engineers' No. 1, 26 oz.	87
Farrier's, No. 7, 7-oz.	90
Machinists', No. 1, 7-oz.	64

Nail.

Vanadium, No. 41, 30-oz. each	1 42
Vanadium, No. 41 1/2, 16-oz. each	1 42
V. & B. No. 11 1/2, 16-oz. each	92
Garden City, No. 11 1/2, 16-oz., each	69
Tinner's Riveting, No. 1, 8-oz., each	71
Shoe, Steel, No. 1, 13-oz. each	71

Tack.

Magnetic.	
No. 5, 4-oz., each	78

HAMMERS, HEAVY.

Farrier's, No. 10, 10-oz.	\$1 01
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HANDLES.

Axe.	
Hickory, No. 1 per doz.	4 00
Hickory, No. 2	3 00
1st quality, second growth	6 00
Special white, 2nd growth	5 00

Chisel.

Hickory, Tanged, Firmer assorted	55c
Hickory, Socket, Firmer, Assorted	70c

File	per doz. \$1 20
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Hammer and Hatchet.	
No. 1 per doz.	\$0 90
Second Growth hickory, per doz.	1 50

Soldering.	
Per doz.	\$2 40

HANGERS.

Conductor Pipe.	
Milcor Perfection Wire	25%
Eaves Trough.	
Steel hangers	30%
Triple Twist wire	10%
Milcor Eclipse Wire	20%
Milcor Triplex Wire	15%
Milcor Milwaukee Extension	15%
Milcor Steel (galv. after forming) List plus	12 1/2%
Milcor Selflock E. T. Wire, List plus	40%

HASPS.

Hinge, Wrought, with staples.	Net
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HATCHETS.

V. & B. Supersteel.	Each
Broad, No. 1, 24-oz.	\$1 52
Half, No. 1, 15-oz.	1 33
Half, No. 3, 27-oz.	1 44
Claw, No. 1, 19-oz.	1 38
Flooring, No. 1, 20-oz.	1 53
Shingling, No. 1, 17-oz.	1 28
Lathing, No. 1, 14-oz.	1 28
Lathing, No. 2, 17-oz.	1 33
Vanadium Steel.	
Half, No. 2, 22-oz.	\$1 04
Underhill Pattern Lathing, 9 row, 19-oz.	2 14

HINGES.

Heavy Strap, in Bundles.	
4 inch, dozen pra.	\$1 26
5 " " "	1 74
6 " " "	2 12
8 " " "	3 54
Extra Heavy T in Bundles.	
4 inch, dozen pra.	\$1 90
5 " " "	2 01
6 " " "	2 52
8 " " "	4 30

HOES.

Garden	net
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HOOKS.

Box.	
V. & B. No. 1, each	\$0 26
Conductor.	
Milcor	
"Direct Drive" Wrought Iron for wood or brick	15%
Hay.	
V. and B. No. 1, each ..	26

Bar Meat.

V. and B. No. 26, 1/4", each	69
V. and B. No. 28, 1/4", each	16

Screw Meat.

V. & B. No. 2, per gro.	7 15
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Butchers' "S."

V. & B. No. 6, each	09
V. & B. No. 8, each	13

HOSE.

1/2-in. 2 ply molded.	12c
1/2-in. cord	3 1/2 cts to 10c
1/2-in. wrapped	14c

HUMIDIFIERS.

"Front-Range" Automatic.	
In single lots	50%
In lots of 10 or more	50-5%
In lots of 25 or more	50-10%
Vapor pans, etc., each	50%

IRONS.

Sad.	
Genuine Mrs. Potts, nickel plated, per set	\$1 55
Asbestos No. 70, per set.	2 10
Asbestos No. 100, per set.	2 30
E. C. Stearns'.	
No. O.A. Corner, doz. sets.	\$2 50
No. O.B. " " "	2 75

KNIVES.

Butcher.	
Beechwood Handles, 6-inch blade	25%
Beechwood Handle, 7-inch blade	25%
Beechwood Handles, 3-inch blade	25%
Cooper's Hoop	25%
Drawing.	
Standard	25%
Adjustable	25%
Barton's Carpenters'	25%

Hay.

Iwan's Solid Socket	25%
Heath's	25%
Iwan's Sickle Edge	25%
Iwan's Imp'd Serrated	25%

Hedge.

Challenge	25%
Disston's No. 1	25%

Patty.

Common	25%
Lander's	25%

Scraping.

Beech Handles	25%
Lander's	25%

KNOBS.

Door.	
Mineral	per doz. \$2 00
Porcelain	2 00
Jet	2 00

LADDERS.

Step.	
Common, per ft.	28c
Common, with Shelf, add 10c	
IXL	34c
Challenge, 6 to 9 ft.	55c
10 to 16 ft.	60c
Kant-Break, per lineal ft.	75c

LANTERNS.

Monarch tin, hot blast.	Per doz. \$ 25
Dietz No. 2 cold blast	12 00
Best tubular	8 25
Competition lanterns No. 6 tubular	6 90

LAWN MOWERS.

12-inch	\$5 20
16-inch	5 85

Ball Bearing.

4 blade, adjustable bearing.	\$5 20
14"	7 80
16"	

LEATHER BELTING.

From No. 1 Oak Tanned Butts.	
Extra heavy, 18-oz.	35%
Heavy, 16-oz.	40%
Medium, 14 1/2-oz.	40%
Light, 13-oz.	50%

LEATHER LACING.

Cut, strictly No. 1	45%
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LEVELS.

Disston, No. 28 Asst.	\$22 05
" No. 18, 20 in., each	1 33
" No. 22, 24 in., each	2 40
" Shafting, 6 in.	19 80
" " 6 in. gr. glass	24 20
" No. 1 Asst.	5 75
" No. 2 Asst.	12 40
" 24-26 in., each	1 02
" 28-30 in., each	1 00

LIFTERS.

Stove Cover.	
Coppered	per gro. \$6 00
Alaska	4 75

LOCKS.

Barn Door.	
No. 60 Stearns'	per doz. \$11 00
No. 80 " " "	20 00

MALLET.

Carpenters'.	
Fibre Head No. 2, per doz.	\$12 00
" No. 3, " " "	15 50
" No. 3 1/2, " " "	20 50

Round Hickory, per	doz. \$3.00—5 00
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Tinner's.	
Hickory	per doz. \$2 25

MATS.

Door.	
National Rigid	5 & 10 & 5%
Acme Steel Flexible	50%

MITRES.

Galvanized steel mitres, and caps, end pieces, outlets	30%
Milcor	
Galv. one piece stamped	40%

MOPS.

Cotton, Star (Cut Ends).	
Pounds 12' 15' 18' 24'-3-oz.	
Per doz. \$4 00 4 25 5 50 7 00	
Enterprise	16%
Parker	50 & 5%

NAILS.

Cut Steel	\$4 55
Cut Iron	4 55

Wire.	
Common	3 65
Cement Coated	3 00

NETTING, POULTRY.

Galvanized before weaving	45-10%
Galvanized after weaving	45%

NIPPERS.

V. & B. No. 30	75c
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Double Duty.	
V. & B. No. 64	\$1 03

NOZZLES.

Hose.	
Diamond	per doz. \$5 75
Magic	9 50

OILERS.

Chase Pattern.	
Brass and Copper	10%
Zinc Plated	40 & 5%

Railroad.	
Brass	20 & 5%
Coppered	50 & 5%

Steel.	
Copper Plated	70 & 5%

OPENERS.

Delmonico	per doz. \$1 20
Never Slip	60

Crate.	
V. & B. per doz. \$7 25—11 00	

Copper Burrs only.....	20%
Ball Bearing—Girls'	1 55